

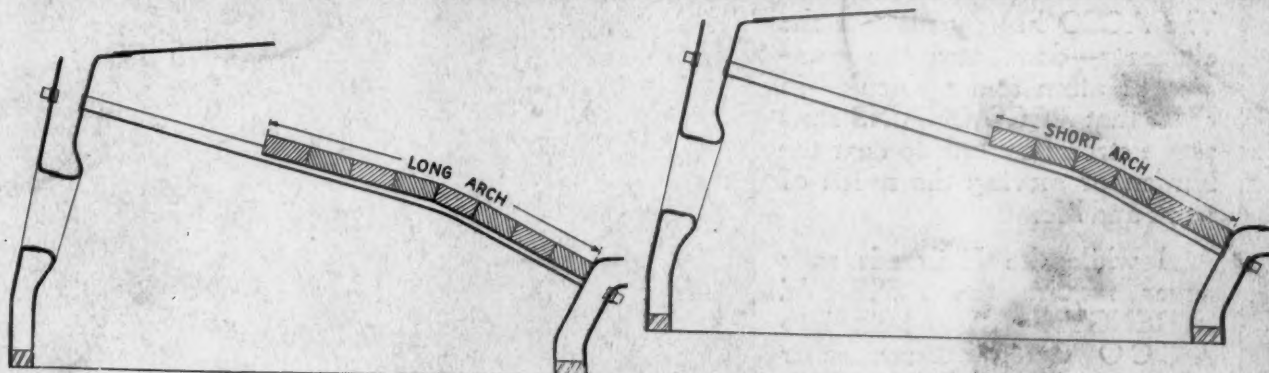
Railway Age

FIRST HALF OF 1920—NO. 2

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SIXTY-FIFTH YEAR

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EDITORIAL

Railway Age

Table of Contents will be found on Page 5 of the Advertising Section.

The three-wire system of transmission and distribution of electric power for the operation of trains has been proposed

Transmission of Power for Electric Trains

by Alfred Raworth, electrical engineer of the South Eastern & Chatham, England, and an article on this subject is presented in this issue of the *Railway Age*. Mr. Raworth has spent a considerable amount of time in this country inspecting and investigating electrified sections of our railroads, and has applied the experience of American railroad men in developing the innovation which he proposes. The three-wire system has been used for lighting and power distribution ever since electric power was commercially practical, but as applied to the operation of a single electric locomotive or electric train it is something entirely new. The scheme proposed provides for two conductor rails and duplicate sets of the equipment on the locomotive or car. These are added complications, but they are offset by distinct advantages. Direct current power at 3,000 volts supplied from conductor rails can be used for multiple unit cars with this system and the voltage drop through the ground or grounded rail from train to sub-station is practically eliminated. English railways, because of different conditions, are much harder pressed by the need of electrification than are the railroads in the United States. The indications are, however, that there will be a much more extended application of electrification in the country and it will be to our advantage to profit by the experience and the suggestions of railway men abroad.

The most gratifying feature of the recent debates in the Senate on the Cummins bill is that they disclose that a large number of the statesmen of both political parties are getting a real understanding of the railroad situation and of the things needed to solve the problem which it presents. The knowledge

Statesmen Getting Understanding of Railroad Problem

of railroad matters which has been displayed by the members of the Senate Committee on Interstate Commerce, who conducted the railroad hearings and drafted the Cummins bill, is especially notable and striking. The addresses which have been made by Senators Cummins, Kellogg, Underwood, Townsend, Pomerene and some others have been among the ablest utterances that have ever been made by public men upon the subject of railroad management and regulation. The main criticism which has been justly passed upon discussions of railroad matters in the Senate and House in the past has related, not to the conclusions which public men have drawn, but to the gross ignorance of facts which they often have disclosed. Any man can be excused for drawing wrong conclusions from correct facts, for human reason is fallible, but no man can be excused for participating in a discussion except to get information if he doesn't take pains to learn the facts about the subject being discussed. The one member of the Senate committee who has shown that he is a Bourbon, in that he does not learn anything or forget

anything, is Senator LaFollette. Whenever he has participated in the debates it has been merely to repeat the same misrepresentations and falsifications and to air the same prejudices which we long since learned to expect from him. He calls himself a Progressive and some people call him a radical, but as respects the railroad question he is still in the dark ages, and evidently intends to stay there. However, it is naturally to be expected of any man who was as antagonistic as he was to every proposal to promote the interests of the United States during the war that he will also oppose every proposal that may be made to promote the welfare of the United States during the period of reconstruction following the war. Senator Cummins, before he had studied the railroad situation thoroughly, used to talk very much like Senator LaFollette does now. He has shown that he is a statesman by broadening his views and changing his attitude as he has increased his knowledge; but LaFollette is still the same old LaFollette, and always will be—cruel as it is to say so!

The people of the United States are looking forward to doing the largest and most prosperous business in 1920 that

Railroad Legislation and Increased Production

they have ever done. Increased production in all lines is being urged through innumerable channels, and the indications are that a real effort will be made by both capital and labor to secure increased production. Unfortunately, most public men and business men do not seem to realize that whether there will be or can be any substantial increase of production in 1920 will depend very largely upon what kind of railroad legislation Congress passes and how soon it passes it. With their existing facilities the railroads of the United States, working to their utmost capacity, cannot handle all the commodities the country can now produce. This was demonstrated clearly in 1917, in 1918 and in the early fall of 1919. It has been charged that the railways "broke down" under private management; but in 1918, under unified government operation, when the investment in facilities was \$577,000,000 more than in 1917, they were able to move less than 2 per cent more freight than in 1917. The amount that the country can produce, or can benefit by its productive activities, depends on how much the railways can haul. Since the railways as a whole have been working to their capacity, it follows that there must be an increase in their capacity before there can be a large increase of production. There cannot be any substantial increase in the capacity of the railways in 1920 in time to enable them to handle the peak of the traffic of this year unless railroad improvement work on a large scale is begun soon; and it cannot be begun soon unless Congress speedily passes needed railroad legislation. Every day that Congress delays to pass needed railroad legislation it is reducing the amount of traffic the railways can handle in 1920, and therefore the amount of things that the United States can produce in 1920.

"Normal Operating Conditions" and the Railroad Deficit

THE RAILROAD ADMINISTRATION has issued a statement regarding the deficit incurred by it in operating the railroads during the 23 months from January 1, 1918, to December 1, 1919, which, taken at its face value, would convince many persons that the railways under private operation will not need any advance in rates. The statement doubtless was intended as an explanation and defense of the record which the Railroad Administration has made in incurring deficits rather than as an argument against an advance in rates. Unfortunately, many persons, to serve their own ends, will use it for other purposes. The Railroad Administration has a right to explain and defend its record. When, however, it does it in a manner that is adapted to do injustice and harm, as in this case, it becomes a duty to point out its inconsistencies and fallacies.

The main reason why the Railroad Administration's statement is adapted to mislead the public and do harm is that it attempts to show what the financial results of government operation would have been if the present passenger and freight rates had been in effect from January 1, 1918, without including in its estimate anything whatever to show what the financial results would have been if the present wages and working conditions of employees and the present prices of fuel, materials and equipment also had been in effect from January 1, 1918. The second reason why the statement is misleading is that it treats as "abnormal" practically all conditions which have tended to reduce net earnings under government control and as "normal" practically all conditions which have tended to increase them. If the statement had been deliberately prepared to afford a false basis for opposing advances in rates it could not have been better adapted to that purpose.

The Railroad Administration states that in the 23 months ending November 30, 1919, it incurred a deficit of \$529,500,000. The total deficit really was much larger, since no allowances are made for interest on increased investment and several other large and important items. It divides these 23 months into four periods. The first period is the calendar year 1918, when the deficit was \$236,500,000. This period, says the Railroad Administration, "was abnormal in being a war year and also on account of the fact that increases in freight and passenger rates were effective for practically only the last half of the year, while a large proportion of the increase in wages was retroactive to January 1, 1918. * * * It is estimated that if General Order 28 (the order making advances in freight and passenger rates) had been effective January 1, 1918, approximately \$494,000,000 of additional freight and passenger revenue would have accrued to the Railroad Administration without any increase in operating expenses. If this additional revenue had been obtained, there would have been a surplus of about \$14,000,000 from operation for the 22 months ending October 31, 1919, instead of the deficit shown above."

This reasoning is fallacious and misleading. It is true the advances in rates were not in effect from January to June, 1918, but neither were anywhere near all of the advances in wages which have been made. Upon what theory of fairness or logic does the Railroad Administration calculate what the results would have been if *all* the advances in rates had been in effect during the time, when certainly not more than one-half of all the advances in wages which have been made under government operation were in effect? Furthermore, during 1918 most railway employees were working on a ten-hour basis, while most of them are now working on an eight-hour basis, the result being there are now probably 150,000 more employees than there were in the first six months of 1918. The railway companies must

in future do business on the basis of all the wages and conditions of employment which the Railroad Administration has established during the entire two years. It should also be noted in this connection that "war conditions" obtained in nine months of 1917; as well as in 1918; and if they were abnormal in 1918, they were equally so in 1917.

Second period, six months January-June, 1918, deficit \$228,700,000: These six months, the Railroad Administration says, "reflected the slump in freight business following the armistice and the readjustment to peace conditions. This period reflects the increased wages for the full period and the greater portion of the present wage scale. It does not, however, include the increase to shopmen which was retroactive to May 1, 1919." This period was abnormally bad because of the sharp decline of traffic. In one important respect, however, it was abnormally good, the weather conditions in the first half of 1919 having been as favorable to economical operation as were ever known in that period. It was no worse in respect to the decline in traffic than periods that the railway companies have had to go through—as, for example, in 1908, and 1914 and 1915.

Third period, four months, July to October, 1919, inclusive, deficit \$3,300,000: This period, the Railroad Administration asserts, "may be said to represent approximately normal operating conditions." This gives us the measure of what the Railroad Administration regards as normal. It was a period of *maximum* passenger and freight traffic and *extremely favorable* operating conditions. If the rates which the railways are to be given in future are to be based on the results obtained by the Railroad Administration under the almost ideal conditions of July to October, 1919, the number of railway companies that will soon be bankrupt will be larger than we have anticipated.

Fourth period, November, 1919, deficit \$61,000,000: The Railroad Administration assumes the deficit in December will prove to have been relatively as large as in November. The operations of these two months, it says, "were so seriously affected by the coal strike as to destroy their value for estimating normal earning capacity." It is undoubtedly true that if the coal strike had not occurred, and no other great disturbance due to man or nature had come, net earnings in November and December would have been much larger. But the coal strike did come; and there is no reason for doubting that it also would have come under private operation. If it had come under private operation it would have produced very much the same effects on net earnings that it did under government operation. Therefore, it cannot rationally be excluded from consideration in determining what advance in rates the railways need.

The government has been operating the railways for 24 months. According to the Railroad Administration's reasoning, in 20 out of the 24 months the conditions were "abnormal" and it was only in the four months when the smallest deficit per month was incurred that "approximately normal operating conditions" prevailed. The trouble with all this reasoning is that it does not recognize the fact that ideal conditions are not normal conditions in the railroad business, under either government or private operation, but that it is perfectly normal for conditions constantly to develop which render it impracticable to secure the operating and financial results which theoretically ought to be obtainable. No year ever passes when some or all of the railroads are not hard hit by an Ohio river flood; or a San Francisco earthquake; or a strike of their shop employees, such as occurred on the Illinois Central, Union Pacific, Southern Pacific, and Missouri, Kansas & Texas a few years ago; or a coal strike, for coal strikes have occurred before; or an enormous decline in business, such as occurred in 1908, in 1914 and 1915, and again in 1919.

The railway companies of the United States would gladly

be insured in future against the possibility that they would have to make advances in wages before they could get advances in rates but they constantly made advances in wages from 1907 to 1917, and meantime the average rates received by them declined. They would gladly be insured against railroad strikes, coal strikes, and all other kinds of strikes. Apparently, however, Congress does not intend to give them any such protection. They would gladly be insured against heavy declines of traffic, but nobody has devised any means by which this can be done.

Normal conditions in the railroad business are not ideal conditions, but average conditions, and average conditions from month to month and year to year are made up of good conditions and bad conditions. As long as the railroads must be managed under average conditions their rates must be made with reference to average, and not ideal conditions, or they will never be able to prosper and give good and adequate service to the public. We are quite willing to attempt to maintain the proposition that the Railroad Administration, during its twenty-four months of existence has had, on the whole, even better than average conditions under which to operate. The railroad deficit has not been due to "abnormal" operating conditions, whatever else it may have been due to.

Protection of Work Trains

"UNDER CONTROL" is an important phrase in train rules which ought to be the subject of systematic discussion and instruction much more generally than it is. Enginemen have to run "under control" many times on every run, and the varying circumstances under which the rule comes into effect (when they are controlling their speed by rule rather than by unrestricted individual discretion) are so difficult to define that the defining process ought to receive very careful attention. This subject will arise in the mind of everyone who reads the account of the collision near Adamsville, Alabama, on August 9, reported in another column.

The Interstate Commerce Commission investigator places the responsibility for this collision mainly, perhaps wholly, on the men who violated the rule to stop (at a red automatic block signal on single track) five minutes, and then proceed five minutes behind a flagman. We shall not quarrel with this decision; but it is to be recognized that where block sections are two miles long—or even one mile—the sending of flagmen ahead on foot is a process which often consumes a good deal of time, and it is not to be wondered at that operating officers will try their best to secure safety in some other way. In this instance, as so often occurs in freight train collisions and work train collisions on single track, a half dozen men made mistakes or ignored well known rules, and their conduct affords a number of useful lessons. The collision occurred at low speed and would have been almost a minor incident but for the fact that thirty-one workmen were injured, three of them fatally.

"Under control," on double track, where the only possible obstacle will be a standing train, means a speed low enough to be able to stop, before striking a visible, motionless obstruction; but if you are on single track, or on a yard track, where an opposing train or engine may be moving toward you, the speed must, of course, be much lower.

It is necessary in that case to require both of the opposing trains to stop in one-half the length of track seen to be clear. This is a very difficult rule to enforce. It is hard enough on a line of easy curves, as in yards; on eight-degree curves in rock cuts it may mean a rate of four miles an hour, or slower. At that rate the progress made is likely

to be little better than simple flagging. All rules must allow some little margin for error, and in this matter the calculation of the margin requires too fine figuring—it is out of the question.

The use of automatic block signals greatly simplifies the question of train protection; but when a work train occupies the main track and the attempt is made to avoid the delays incident to the restrictions imposed by the block signal rules, a variety of complications is introduced and the question is whether it is possible to do this without losing more than is gained. Safety may hinge on apparently small points which the men in charge may fail to appreciate until too late. For example, in the Adamsville collision, both enginemen were on the outside of the curve, as the work-train engine was moving backwards; consequently both may have seen the opposing train a few seconds too late. On the work train the conductor, standing on the platform of the caboose, exercised the speed control functions of the engineman, but he did not have his hand on the air-brake lever, and he lost a little time in that way. Every day we see illustrations of the risk—usually very small, but yet a risk—of entrusting enginemen's duties to conductors and brakemen without giving them an engineman's training. Three seconds' time, no doubt, might easily have saved those three lives.

The flagman ought to have kept silent as to the exact location of the work train; but is there any use in trying to enforce rules so strictly as that? Probably not; and yet just such small things save lives; and if we are going to depend on the "under control" rule very small things must be taken into account.

The dispatcher told the work-train conductor, informally, that the first northbound train would be the regular passenger; and in that, according to the record, gave erroneous information. He says that he would have made this formal, by issuing a meeting order, if the conductor had so requested. The conductor had no right to rely on such informal information; and so far as definite action is concerned it does not appear that he did; but who will say that that information was not, consciously or unconsciously, the influence that kept his hand off the air brake lever? Everybody likes to consider these insoluble questions when it is a matter of speculative discussion; why not keep them in mind in making the rules?

Someone above the dispatcher had a hand in the complications; he issued two bulletins which figured in the case. These bulletins were not well worded, and one of them seems to have failed of its purpose because of negligence in posting or mailing; and the two ought to have been combined in one. Their merits and demerits cannot be discussed in this place, for to do so would take whole pages; but the mere perusal of them affords sufficient evidence of the need for extended examination of the whole question of protecting work trains whether they occupy a single-track line which is equipped with automatic block signals.

Including the engineman and the conductor of the northbound train we thus find six individuals at fault; and Mr. Borland's report brings out other weak points. To the trainmaster or other officer who has to instruct trainmen, the outstanding virtue of the block system is its simplicity; but when we suspend the block system—as we do every time a "stop-and-proceed" movement is made, and whenever a work-train conductor allows a flagman to give instructions which in the slightest degree modify the standing block signal rules—we suspend some of its benefits. It is of the highest importance to make very clear the distinction between block-signal protection and protection by flag without the benefit of the block signals; and to explain this distinction to conductors and enginemen until they understand it thoroughly. This may take ten times as many lessons, interviews, examples and punishments as would be consid-

ered necessary under our preconceived notions of adequate examinations; but reiteration, *until success is certain*, is the only safe rule for the trainmaster in giving rules to trainmen.

New Books

Applied Science for Wood-Workers. By W. H. Dooley, in charge of Navy Yard Continuation School for New York Board of Education. 446 pages, 5¼ in. by 7½ in., illustrated, bound in cloth. Published by the Ronald Press, New York.

The purpose of this book is to provide an elementary course in applied science for the woodworking trades to bridge over the gap between the abstract knowledge of the principles of science acquired by the average high school student and the practical application of these principles in industrial life. The book is a compilation of considerable generally known data, supplemented by knowledge gained through practical experience. Of particular interest to woodworkers are the chapters on trees, lumber, and defects of wood, and in addition the book treats in a clear and concise manner of woodworking tools and their uses, modern foundry methods, heating, ventilating, paints and varnishes, electricity and other subjects, which although not directly related to the woodworking trades are of value to anyone engaged in mechanical pursuits. A series of questions and problems at the end of each chapter serves to bring out the salient points of each subject and to test the student's power of concrete application of the principles set forth in the text.

Proceedings of the American Railway Engineering Association, 1011 pages, illustrated, 6 in. by 9 in. Bound in cloth. Published by the American Railway Engineering Association, Chicago.

The proceedings of the twentieth annual convention, held at the Congress Hotel, Chicago, Ill., on March 18, 19 and 20, 1919, as published in this volume, are the smallest in the last eight or nine years of the association's history. The 23 reports of the standing and special committees cover only 740 pages, while the discussion was more brief and the monographs fewer in number, showing the effect of the war on the available time of the committees. The report on rail is, as usual, the longest and deals mainly with rail failures from interior fissures and the results of tests on splice bars made at the Altoona laboratory. The studies on economics of railway operation and of labor, which were touched upon in the year previous, have made considerable headway and are two of the important reports presented. Among other studies of special interest and value are those on iron and steel structures, including tentative specifications; the unified operation of terminals and the ticket-selling problem; the effect of signaling and the proper location of passing sidings on the capacity of single and double-track lines, and considerable data relative to masonry and concrete construction. Three monographs are included, "A Study of the Mechanics of Curve Resistance" by John G. Sullivan, consulting engineer, Canadian Pacific; "Practice in the Design of Concrete Floor Slabs and Flat Top Culverts" by George H. Tinker, bridge engineer, New York, Chicago & St. Louis; and "Service Tests of Cross Ties" by P. R. Hicks, engineer in forest products, Forest Products Laboratory, Madison, Wis.

The German Railroads have removed the limit on the size of express packages to 50 kilos (about 110 pounds), and there is therefore at present no limit whatever on the size of express packages which may be shipped by rail in Germany. The withdrawal of this regulation is the result of continued and urgent representations from various branches of German industry in all parts of Germany.

Letters to the Editor

The Shopmen's Agreement and Sunday Work

ROCHESTER, N. Y.

TO THE EDITOR:

Rule No. 6 of the new shopmen's agreement seems to be quite plain in its intent that the various crafts affected shall receive punitive overtime only outside of the bulletined hours on Sundays and holidays as well as week days. This agreement goes further, and in Rule No. 181 states that previous practices shall be retained only when not in conflict therewith.

Notwithstanding this fact, a number of railroads are still paying roundhouse employees and car inspectors on the old basis of time and one-half for Sundays and holidays.

Is it fair to single out one class of employees and present them with a half day's pay on certain days when it is recognized by all other employees and demanded by the public that a railroad must operate seven days a week?

The Twentieth Century Limited must run on Sundays, and the dispatcher who controls its movement receives his regular day's pay. The engineer who runs through snow, rain or sunshine at 60 miles per hour does not receive a punitive rate because he must work on Sundays and holidays. The conductor, the fireman, the brakeman and so on down through the many employees upon whom the responsibility for the safe movement of this wonderful train rests, receive a day's pay seven days a week.

Is it just to the public at large who have to foot the bill? We read in the daily papers that 625,000 shopmen are demanding an increase, and assuming that 20 per cent of this number are required to work seven days a week and 70c per hour as an average wage, we find that in a year of 52 Sundays and seven recognized holidays these men receive \$20,650,000 as a premium above the fair compensation given on the other 306 days for identically the same effort.

Why should the director general permit the misinterpretation of Rule No. 6?

R. W. H.



Photo from International

The Railway Bridge Connecting Omsk with Kolomzeno, in the Region of the Latest Bolshevik Activities



The Jacksonville Station from the Plaza

New Union Railroad Facilities at Jacksonville

Passenger Operating Efficiency Increased Eighty Per Cent—
Freight Interchange Capacity Doubled

TO KEEP ABREAST with the rapid development of the state of Florida and the increasing importance of the city of Jacksonville as a railroad center, the roads entering that city are now expending more than \$3,500,000 in expanding their terminal facilities for the handling of freight and passenger traffic. The improvements include a new Union station recently opened for service, enlarged freight and passenger track facilities and the construction of three modern interlocking plants to control the movement of trains through the terminal. The project is being carried on for the railroads by the Jacksonville Terminal Company.

The terminal company was organized and incorporated under the laws of the state of Florida in April, 1894, for

with the Atlantic Coast Line. The company was incorporated with a capital stock of \$100,000, consisting of 1,000 shares of the par value of \$100 a share. Each of the three original lines assumed one-third of the total issue of stock, with the exception of one share held out for each of the six directors. The capital stock was increased to \$200,000 in 1902, a year after the Atlantic, Valdosta & Western was admitted into the corporation. The capital stock was then divided into four equal blocks, each of the four roads assuming 25 per cent of the total. The Atlantic, Valdosta & Western was afterwards purchased by the Southern Railway and was incorporated with the Georgia, Southern & Florida. The Southern Railway and the Georgia, Southern &



Looking Down the Concourse

the purpose of handling the combined business of the railroads entering the city and to replace the inadequate facilities for the handling of both passenger and freight businesses at different and remote parts of the city. The original lines forming the corporation were the Jacksonville, St. Augustine & Indian River, which afterwards became a part of the Florida East Coast; the Florida Central & Peninsula, which was later taken over by the Seaboard Air Line; and the Savannah, Florida & Western, which was merged

& Florida obtained the stockholders' rights of the Atlantic, Valdosta & Western in the Jacksonville Terminal Company, each assuming 12½ per cent of the total. Thus at the present time the capital stock is distributed 25 per cent each to the Atlantic Coast Line, the Seaboard Air Line and the Florida East Coast and 12½ per cent each to the Southern Railway and the Georgia, Southern & Florida.

In 1904 the old terminal station building and the passenger and freight yards were built by the terminal com-

pany, and they remained in service up to the inception of the present project with few alterations. Since 1900 the development of the state of Florida has been remarkable and has been reflected in the increase in the amount of traffic, both freight and passenger, which passes through the city of Jacksonville, the gateway of traffic to the rest of the state, all of which is handled by the terminal company. This increase is shown in the table.

Year	Passenger trains	Freight cars interchanged
1900	19,000	40,000
1910	25,235	65,100
1917	29,800	314,000

In 1915 a committee of engineers, consisting of the chief engineers of the five roads entering the terminal, was appointed to devise means for the proper handling of this increased traffic, which is seasonal in character and at its peak in the winter months. Under its direction a certain portion of the facilities were redesigned in 1916 so as to double the capacity of the interchange facilities and to increase by 80 per cent the ease of operating passenger equipment.

The plans perfected by the committee provided for the construction of a new Union passenger station, modern in all respects, the remodeling of the old passenger station for baggage handling purposes and extensive track changes, includ-

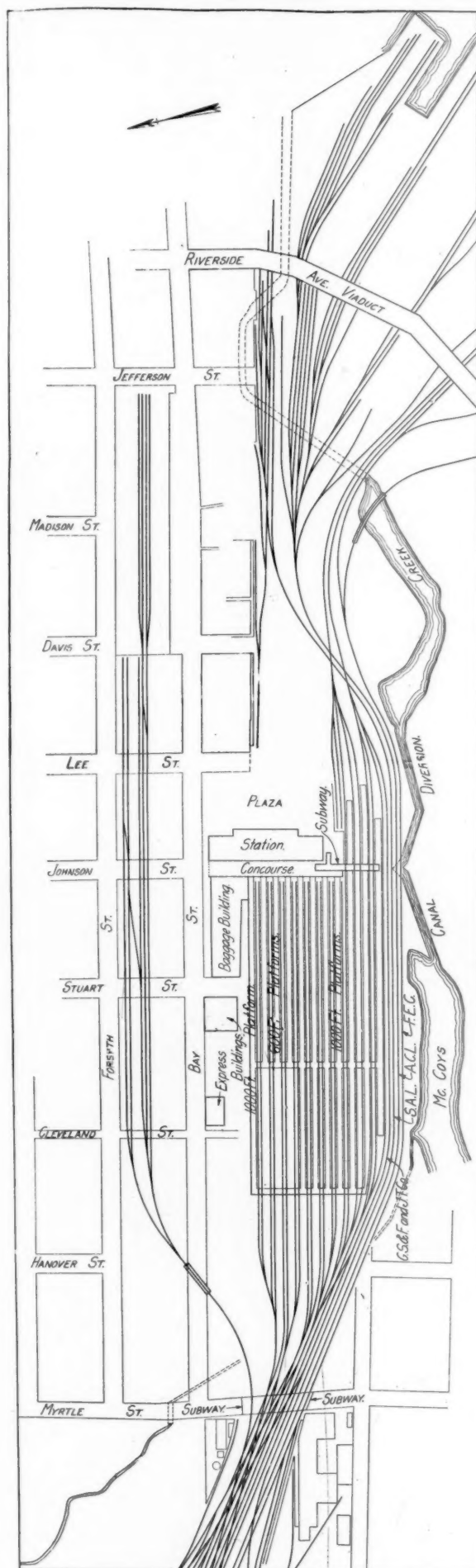


The Colored Waiting Room

ing a rearrangement of the thoroughfare tracks, a new passenger station track layout and increased track capacity for handling passenger coach equipment and for the interchange of freight.

The old passenger track layout at the station consisted of 17 parallel tracks over which train movements were controlled by hand. This is replaced in the new layout by a system of 26 tracks, consisting of 16 stub and departure tracks, 6 through passenger tracks and 4 through freight tracks, located from the station in the order named. In the new layout the train movements are controlled from an electro-pneumatic interlocking plant located at the throat of the yard, thus accelerating the movements of trains and securing approximately 75 per cent greater efficiency than the old system and permitting the accommodation of 75 per cent more travel.

In the old layout access to and from the station and tracks could only be had by crossing the tracks at grade, thus necessitating the breaking of the standing trains. The new layout is so arranged that access to departing trains is direct from the passenger station concourse, these trains backing into the station and receiving passengers from the ground level. Access to incoming trains is through a subway provided under the through passenger tracks, which are elevated slightly above the general level of the departure tracks. The



Track Plan of the Jacksonville Terminal Station

subway is approached from the concourse and the platforms by means of ramps, thus obviating the necessity of travelers crossing the tracks going to and from the trains or of breaking the trains. The freedom of movement of pedestrian travel is further ensured by means of a baggage trucking platform. The importance of these improvements is evident when it is considered that in the winter months the train schedule provides for 150 trains in 24 hours. With the switching this involves approximately 500 movements in the station per day.

The new coach yard which provides capacity for 115 80-ft. cars and the new freight yard with capacity for 306 40-ft. cars, are located on the west of and about one-half mile distant from the passenger station track system. The in-



The Butterfly Sheds and Platforms

terlocking installed with the track changes includes the main electro-pneumatic plant, located at the throat between the passenger station tracks and the coach and freight interchange yards to the west and two auxiliary electro-mechanical plants, one at the west end of the yard proper and the other east of the passenger station.

The construction of the new track layout necessitated the diversion of McCoy's creek, the outside freight and passenger tracks being located on a marsh about 100 ft. deep. Delay was experienced in this work, as it was necessary to dredge the new creek channel 12 times because of the soft



The Bay Street Elevation

material which was displaced when making the fill for the tracks. In this dredging work the material moved was wasted on the far side of the canal, raising the level of the adjoining land approximately four feet. In placing the fill for the tracks an excess of 75,000 cu. yd. of material was placed beyond the estimated quantity of 190,000 cu. yd. Settlement is still noticeable in this fill, and it is necessary to resurface the tracks frequently.

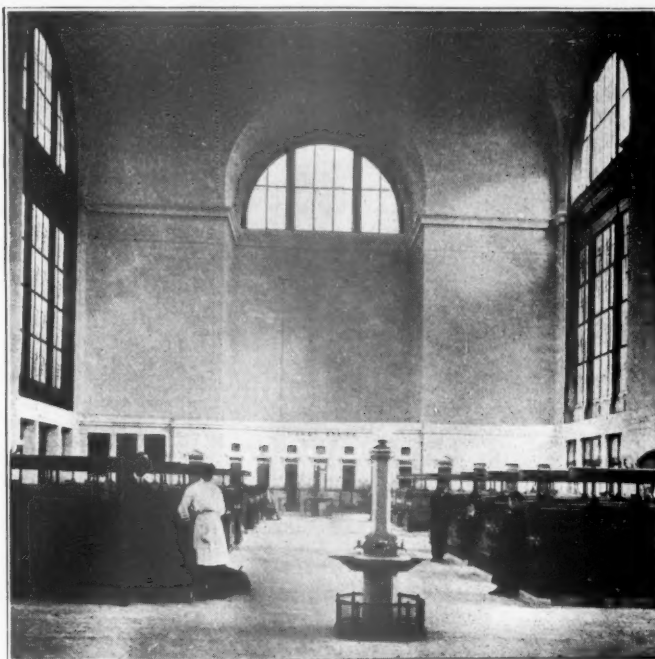
The Passenger Station

The new station is located on Bay street on a site adjoining the old station building, from which it is separated by a concourse 50 ft. wide extending along the rear of the new

station for its entire length. The building is of the Colonial type of architecture, the main portion being 360 ft. long, 78 ft. wide and 90 ft. high.

The structure is supported on concrete foundations resting on wood piles designed to carry 15 tons each. The exterior walls are finished in Mount Airy granite as a base, with Indian limestone above. The building faces on a spacious plaza, and this elevation is set off by a colonnade consisting of 14 massive limestone columns. Buff brick is used in the rear exterior wall and for the concourse.

The main entrance to the station is from the plaza and consists of three groups of seven doors each, leading directly into the main waiting room for white passengers, which occupies all the central portion of the building. The main entrance also serves as the carriage entrance, a marquee being provided beyond the colonnade. The plaza furnishes space for a loop drive and for parking purposes. Passengers having no business to transact in the station may go direct to the trains from the plaza by means of a walk around the



Interior of the White Waiting Room

south end of the station and a ramp to the subway, or they may enter the concourse from Bay street.

The floor in the main waiting room is of marble and the finish consists of Tennessee marble with plaster above. Directly opposite the main entrance is the exit to the concourse, consisting of a group of seven doors in the center, flanked on each side with a group of three doors. The ticket offices are to the right of the room, separating it from the colored waiting room, an arrangement which permits of service to both white and colored passengers from the same offices. The telegraph facilities and the information bureau are located on the left and the right, respectively, of the main group of doors leading to the concourse, and are so arranged that service is to be had both in the waiting room and in the concourse.

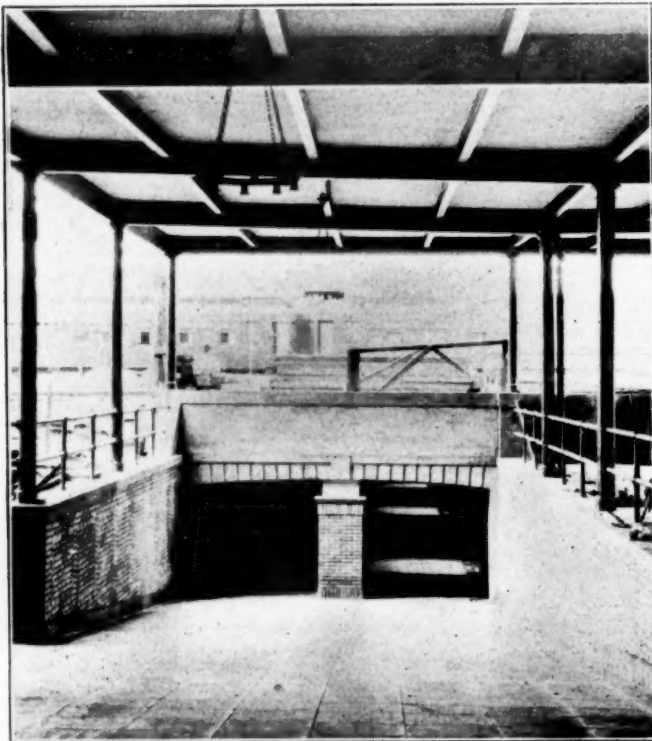
The entire south end of the first floor of the building is devoted to auxiliary station facilities for white passengers. A corridor leading to the left from the main room is flanked on the plaza side with comfort facilities for women and on the concourse side with a smoking room and toilets for men. The corridor provides space for telephone facilities, a soda fountain and a cigar stand and leads directly into the rooms devoted to dining facilities, consisting of a restaurant and a

lunch room. The kitchen facilities are located on the second floor above the restaurant.

The entire north end of the building is given over to facilities for colored travelers. The entrance to this portion of the building is from Bay street through three groups of three doors leading into a vestibule and up a ramp to the waiting room. The ticket facilities are directly across the room from the entrance, and the comfort facilities for women are located to the left of the entrance and for men to the right. The dining facilities are limited to a lunch room.

Both waiting rooms open into the concourse, which is provided with wall seats, thus furnishing additional waiting-room facilities. The parcel and baggage checking facilities, which are located in the old station building, are accessible from the Bay street end of the concourse.

The departure tracks are approached from the concourse through train gates. These 16 tracks are arranged in pairs, the spacing between pairs being 26 ft. and between tracks in the pairs 13 ft. The pairs are separated by low level platforms, temporarily constructed of timber because of settle-



A View of the Subway Approach to Through Trains

ment. Eventually they will all be of concrete and will be covered with butterfly type sheds. A separate platform has been provided for the trucking of baggage, on which all baggage is trucked around the head end of departing trains and then across the tracks to the desired train.

The subway leading under the through passenger tracks is approached from the concourse, the platforms and the plaza by ramps laid on 10 per cent grades. It is of concrete construction, and its foundations extend approximately 8 ft. below the tide water. An automatic electric pump discharging into McCoy's creek has been installed to control the water.

A drainage system, consisting of a main sewer of 30-in. concrete pipe with 12-in. laterals between all the tracks, has been installed to serve the station, yard and trainshed. The main sewer extends entirely across the layout near the station end of the departure tracks and discharges into McCoy's creek. A very soft bottom was encountered in excavating, all of which was done by hand.

This improvement has been carried on under the general supervision of the engineers of the owning roads and under the immediate direction of L. G. Wallis, engineer for the Jacksonville Terminal Company. The firm of Irwin & Leighton of Philadelphia, Pa., is the general contractor for the construction of the main station building, subway and concourse and the remodeling of the old passenger station into a baggage building. The W. Z. Williams Company of Macon, Ga., was the contractor for the grading. All track work was done by the terminal company forces.

Northwestern Region

Awards Safety Banner

THE SOUTHERN PACIFIC (Lines North of Ashland) has been awarded a banner by R. H. Aishton, regional director of the Northwestern region, for obtaining the best results of those roads employing over 2,000 men in the Northwestern region during the recent National Railroad Accident Prevention Drive. Although employing 4,676 men and operating 1,222 miles of road, the Southern Pacific (Lines North of Ashland) had no reportable casualties to employees during the entire period of the drive, while during the same two weeks of 1918 one employee was killed and 13 were injured.

Soon after the plans for the drive were formulated by the Safety Section of the United States Railroad Administration, Mr. Aishton announced that he intended to present a banner to that road employing over 2,000 men and making the best record during the drive and to the road employing less than this number of men and similarly making the best record in this class. The banner to the road in the second group was awarded to the Chicago & Western Indiana, which employs 1,767, and had no reportable casualties to employees during the drive period, as compared to four injuries in 1918.

In a letter addressed to all officers and employees of the Northwestern region, Mr. Aishton also gave honorable mention to the Spokane, Portland & Seattle, because, while employing 2,245 men, it made a clear record during the drive; to the Duluth, South Shore & Atlantic, because, while employing 2,080 men, it also made a clear record during the drive, and to the Chicago, Milwaukee & St. Paul, because, with a working force of 71,550 men, it made the best record during the drive of any of the major roads in the region.

Mr. Aishton's letter also said in part:

"While these roads won signal honor by reason of their achievements during the drive, I am sure there is credit enough for all of us in the knowledge that, because of the care and thought and interest manifested by everyone concerned, so excellent reduction was made in deaths and injuries to employees. We should all take a good deal of pride also in the fact that the Northwestern region excelled the record of all other regions during the drive.

"It is my earnest wish that the officers and employees in this region will continue to so conduct themselves in their duties as railroad men that the work of conserving human life and limb will be constantly more successful."

TRANSPORTATION CONDITIONS IN ALASKA.—Except for the railroad construction during the year the transportation conditions in Alaska have been worse in 1919 than in any previous year, according to a statement from the U. S. Geological Survey. The coastal steamboat service has been unable to meet the demand for freight and passenger transportation, and the river steamer service on the Yukon and its tributaries has been worse than ever. These conditions have tended to discourage those who were planning new ventures,

Railroad Situation Reviewed by the Director General*

Legislative and Other Requisites for Successful Operation, Results of Two Years Under Federal Control

By Walker D. Hines

Director General of Railroads

I WISH, first, to summarize my thoughts on the solution of the railroad problem. For 26 years I have studied the development of railroad regulation. For most of this period I studied it from the standpoint of the railroad companies and for the last two years I have studied it from the standpoint of the general public.

As a preliminary to considering the solution, it is well to consider the condition of regulation in 1917, just prior to federal control.

Unfavorable Conditions Prior to Federal Control

While there were many different railroad companies, the service on the different railroads was inseparably linked in a common transportation system. Freight cars were interchangeable, rates were necessarily the same on different railroads in the same part of the country, wages of some classes of railroad labor were largely standardized and others were becoming so. Movements for either the increase or reduction of rates were joint and affected all the railroads in the particular territory and movements for the increase of wages were likewise joint to a considerable extent, and affected many railroads.

Despite these elements of interrelation affecting service, rates and wages, there were probably more than one hundred distinct railroad interests, at least fifty of which could be regarded as important. It was almost impossible to secure joint action by these interests and almost impossible to accomplish results without joint action.

Railroad labor was completely organized as to the train and enginemen and was largely organized as to some of the other classes, and there was a steady movement towards further organization on the railroads throughout the country. Railroad labor had become violently opposed to arbitration and no means existed for satisfactory dealing with labor problems. Common action on the part of railroad labor was much easier than common action on the part of the railroad managements.

Public regulation of the railroads was far reaching both as to service and as to rates. Congress and the state legislatures and some state commissions were constantly making regulations affecting service and increasing the cost. The movement was steadily in the direction of greater and more costly regulation of railroad service. The regulation of rates was almost universal. The Interstate Commerce Commission had practically complete control over interstate rates and nearly all the state commissions had control over the intrastate rates and from time to time state legislatures directly fixed the rates. The railroad executives frequently complained that they had no substantial control over the management of the properties.

The term private management had become largely figurative because important factors vitally affecting the control were largely prescribed by Congress and the Interstate Commerce Commission, by the state legislatures and the state commissions, and by the various labor organizations.

And yet while the public and labor through all these different agencies, were directly dealing with the problems of

railroad management, there was no basis for securing common understanding by any two of these three interests. Each public agency worked by itself, without reference to the railroad managements or labor except through the medium of legal proceedings. The labor organizations formulated their policies and carried them out without reference either to the public or to the management except in the course of arms length negotiations. Each railroad management decided upon its own course as well as it could without the co-operation of either public representatives or labor representatives. The general result was a serious lack of understanding on the part of each of these three interests as to the point of view of the others.

While there was so much public regulation there was no definiteness whatever as to the basis of regulation. There was the general idea that rates ought to be enough to enable the companies to earn a fair return upon the fair value, but neither a fair return nor the fair value was subject of ascertainment.

Some of the railroads were prosperous and showed large earnings and large rates of returns upon their investment and upon their stock, so large in fact as to be a constant invitation to attacks on the part of elements of the public and of political life seeking rate reductions, and so large also as to stimulate discontent on the part of railroad labor. Other railroads had such poor returns that they found it impossible to raise the money necessary for needed improvements. Yet the rates had to be the same and the wages had to be substantially the same on these railroads so differently circumstanced.

On account of the great number of different railroad companies it was exceedingly difficult for them to concur in any affirmative program either as to rates or as to wages, and it has become strikingly noticeable that the railroad companies had not succeeded in carrying out a satisfactory program for the interchange of freight cars. In times of car shortage it was impossible for a company to get its own cars back on its line, and hence it was unwilling to give up the cars of other companies when it obtained them, and at times a condition of practical anarchy existed in dealing with freight cars owned by other companies.

The situation which I have depicted was frequently regarded as almost impossible by the railroad people. A joint Congressional committee, known as the Newlands committee, was appointed to study the difficulties, but before it reported the war conditions came and federal control began.

There was widespread pessimism as to the railroad situation. Expenses were increasing, and it seemed impossible to obtain increases in rates to reflect the increases in expenses. While there was much criticism of individuals in public authority, I wish to emphasize that it is my opinion that it was the system which was at fault and not the public authorities who administered the system. I do not believe any set of men could have been put in public office who could have made the system a success.

I do not believe we will ever obtain an effective solution without removing the fundamental difficulties which I have suggested.

First, I believe that there will not be a prompt and liberal

*Address before the Association of the Bar of the City of New York, New York City, January 7, 1920.

treatment of rate questions until profits clearly in excess of a fair return are appropriated in part to the public interest.

As an illustration, I have in mind one important railroad company whose railroad, even in this difficult year, will earn over 140 per cent of the standard return, and this company has in the past paid high dividends and in addition has had a large annual surplus. When the railroad companies apply for an increase in rates it will inevitably be urged that an increase ought not to be granted which would still further increase the large profits of this company. For example, an increase of 20 per cent in the freight rates of this company would give it a net operating income more than twice the standard return, assuming that it continued to enjoy the same business. I have no doubt that such a prospect would stimulate the most persistent opposition to the increase, and the result might be that an increase seriously needed by other companies would be defeated simply because the giving of the increase would yield what would be regarded as a grossly excessive profit for this favored company. I see no way to meet such a situation, except to provide for a division of the excess over a clearly reasonable return. Of course, enough of the excess should be given to the company to stimulate efficiency in operation, but beyond that point the fact that the company would get the excess would be a serious obstruction to the railroads in general getting an increase to which on the average they might be entitled. The excess thus appropriated for the public interest should be largely placed in reserves so as to protect the general railroad situation in unfavorable years. Such a course would quiet agitation, will stabilize the situation, and without it I believe it would be impossible to get prompt and liberal treatment of any rate increase question.

Essentials of a Permanent Solution

I believe there must be a definite standard by which the reasonableness of the general rate level can be measured. In the past there has been no appreciable standard. Plausible arguments could be made against any increase that was sought under any conditions. The rate-making body had to take all the responsibility and odium of creating a standard as well as applying it. In my opinion Congress itself should establish a general but workable standard and leave to the rate-making body the application of this standard according to the facts.

I do not believe that there can be successful regulation of the railroad industry without a basis for mutual understanding between those representing the public, labor and the owners, respectively. In the past there has been no basis for understanding except at the end of dispute and controversy. Each of the three great interests has worked to a large extent entirely aloof from the other two.

Capital, Labor and Public Must

Meet on Common Ground

Yet the railroad enterprise is a great, common enterprise. It cannot be conducted without the exercise of the most vital public franchises; nor can it be conducted without the participation of a large body of skilled labor which makes a life career out of railroad employment; nor can it be conducted without the physical property which has been created by the investment of capital. We make a grave mistake in assuming that the representatives of capital can alone manage the situation. The scheme of the past has been on that false theory, and the result has been that the public has injected itself into the management through all sorts of agencies and labor has injected itself into the management through its organizations, not only through direct demands upon railroad companies but through demands on Congress and on state legislatures and public commissions for legislation and regulations affecting management. We have all three interests participating in the management in all sorts

of ways, and yet there is no common ground on which these three elements can meet and exchange views and endeavor to reach conclusions. I believe the only sort of management which can be permanently effective is one which provides for an orderly participation at the outset of all three of these interests, instead of the past scheme which leaves each interest to pursue its own methods irrespective of the others, until an eventual contact is established in some form of controversy.

The fact is that in the past these two essential elements of the public and of labor have asserted their participation only through some form of controversy. The public side of it is asserted through hearings by legislative bodies or by commissions, and these hearings nearly always take on a controversial aspect and the result is that the railroad business is largely conducted through a series of law suits.

The labor side of the matter generally manifests itself in an even more controversial spirit.

In my opinion there must be a form of participation in the management from the outset, which will give each interest to start with an understanding of the reasonable needs and expectations of the other two interests. Out of this community of understanding I believe there will be evolved a much more successful disposition than will otherwise be possible.

But beyond the mere matter of understanding, it will be of vast importance to put on the public representatives and on the labor representatives a direct sense of responsibility for the rendition of the public service. This cannot possibly satisfactorily or completely arise out of the old system, and I do not see how it can be attained except by participation in management which I suggest.

When federal control began there had come to be a vivid realization of the great embarrassments to which a railroad company was subjected by reason of having to engage in the paradoxical practice of running down its credit in order to sustain it. A railroad company could not secure consideration for what it regarded as a necessary rate increase without painting an alarming picture of the critical situation which confronted it unless it got a rate increase. This was necessary because the rate-making tribunal had no first-hand information derived from immediate contact and a direct sense of responsibility for railroad management. The rate-making body approached the matter entirely in an attitude of skepticism. In order to overcome this attitude the railroad company had to stress all the difficulties of its situation, and frequently was rebuked by the rate-making body for discrediting its credit at the very time it was trying to improve it. Yet I believe this result was inevitable under the old system, and we will soon see precisely the same condition repeated if this feature of the old system shall remain in operation. The only way to avoid it is through some radical reconstruction of the management which will bring the public representatives into a direct understanding and also into a direct and original responsibility for the conduct of the business. Unless this can be done I believe it is only a question of time when the remaining vestiges of private management will come to be recognized as altogether impracticable.

Compulsory Consolidation Urged

I do not believe that any form of railroad operation can permanently succeed in this country when conducted through so many different railroad managements as at present. The public interest involved is almost completely homogeneous, because from one end of the country to the other the public wants adequate service and a complete interchange of equipment in order to obtain that service, and of course enjoys uniform rates regardless of the railroads on which the traffic is carried. The labor interest involved was largely homogeneous before the war, and is almost completely so at

present. We cannot, therefore, hope to succeed with a heterogeneous lot of railroad managements, over 100 in number, with perhaps at least 50 of a dominant character. These numerous managements will constantly embarrass each other in many ways. The great variations of prosperity and adversity will completely baffle people trying to understand the real facts as to the needs of the railroads. I believe that it will be essential to consolidate the railroads through some compulsory process into a few great corporations, upon the managements of which the public and labor will be adequately represented.

I know the argument is urged that this will be difficult to accomplish, but I have not the slightest doubt that it can be accomplished if the public realizes the necessity for it, and I am convinced that it is an absolutely necessary step if government ownership is to be permanently avoided.

I am also aware that the suggestion has been made that these consolidations should come about gradually by voluntary action, but my observation of the unsatisfactory results of the old scheme of public regulation and private management are that this situation will not wait for a gradual process of voluntary consolidation. I believe that either this matter must be dealt with in a comprehensive and effective compulsory way or that any scheme of legislation adopted will prove itself a disappointment and a failure long before voluntary consolidations can be worked out.

To recapitulate my views on a permanent solution of the railroad problem, I believe that there must be fundamental changes which will consolidate the railroads into a few great systems. I believe that the public and labor, as well as capital, must be represented upon the managements of these systems. I believe that a definite standard for rates must be established and that earnings clearly in excess of a reasonable return must be provided and must go largely to providing adequate reserves to take care of years of depression and at the same time enough of the excess must be left with the company earning it to provide adequate stimulus for efficiency. In my opinion, if an effort be made to return the railroads to private control without the fundamental reconstruction which I advise, the result will be progressively disappointing, and in a few years the dissatisfaction of the public will manifest itself through an insistent demand for a radically different plan, which is not likely then to stop short of outright government ownership.

The argument has been urged in response to such fundamental changes that we ought not to adopt an untried system but ought to retain the system of the past, with which we are familiar, but it is the very fact of our familiarity with the system of the past which compels me to believe that there must be complete departure from that system. I believe our past experience has demonstrated that the old system will not succeed. It certainly is a poor argument to insist that we should adhere to a failure as a permanent policy simply because we are familiar with it.

Turning to another highly important aspect of this general problem, I wish to point out the unusual difficulties which attend the immediate establishment of any plan of private management with adequate credit to provide the necessary capital needed for railroad development. These obstacles are not only embarrassing to railroad credit, but they also involve serious elements of injury to the public transportation service.

Railroad Credit

I believe there will be general agreement that this is one of the most difficult financial periods in the history of the country or the world. Obviously it will be more difficult to establish satisfactorily the credit of a large number of railroad companies at the present moment than it would be

to do this at a later date when financial conditions generally have become better stabilized.

Railroad credit is dependent, of course, upon the conclusions which the investing public reach as to the earning capacity of the railroads. Necessarily these conclusions must be based upon past experience. The war and the conditions of unrest growing out of the war have created conditions which greatly impair the value of recent experience in railroad operations as a basis for forming conclusions as to actual earning capacity. No one would seriously contend that the year 1918 furnished a satisfactory basis for concluding what the railroads could earn on the basis of a given rate level, but as a matter of fact the year 1919 is going to be equally unreliable and probably more so. In the first six months of 1919 there was a sudden, abnormally heavy and abnormally prolonged slump in freight traffic at a time when the railroad operating machinery was just being readjusted from the war basis. The heavy deficits incurred during the first six months were due largely, if not almost wholly, to this condition. The next four months, from July to October, 1919, represented fairly normal conditions of reasonably heavy business, and in those months under unified operation the results were such that a very small increase in rates would have avoided any deficit. The months of November and December will be useless for comparative purposes, because they will be exceedingly costly by reason of the coal strike, which created an industrial condition unprecedented in this country.

With such conditions it is evident that those opposed to rate increases can find innumerable plausible arguments in favor of small increases and those in favor of large increases can support them by correspondingly numerous and plausible arguments. It is also evident that railroad investors will view with alarm the heavy deficits of the past, and probably will not be reassured without substantial increases. There probably could not be a more difficult time in which to readjust rates so as to reassure the railroad investor and at the same time reasonably protect the public.

By reason of this condition the public interest is confronted with a serious dilemma. How can it at the present moment make rates high enough to constitute adequate reassurance to railroad credit without at the same time making them much higher than would likely turn out to be necessary if the period of readjustment could be postponed until a time of more stable conditions. Undoubtedly if the policy be adopted of establishing independent railroad credit instantly at all hazards it would be only logical to make the rate increases large enough to do so.

There may easily arise out of these perplexities a situation which will fall short of what the railroad investor has been led to expect, and which consequently will not stimulate sufficient confidence in railroad credit.

On one point I believe there must be agreement, and that is that any rate increase which will at all establish an adequate credit for the various railroad companies operating independently on their own responsibility must be substantially greater than a rate increase which would protect the situation temporarily if unified control were continued until more stable conditions appear. This means that the public must pay a very substantial price in an additional increase in rates for the privilege of the immediate resumption of private management.

Car Shortages in Prospect

Again, it is clear that it will not be possible for the railroad companies to make satisfactory financial plans on the basis of the legislation now in prospect in time to commit themselves definitely to large orders for necessary equipment so as to meet the heavy requirements of next fall. For

months I have been pointing out that under existing conditions the Railroad Administration could not order and agree to pay for this equipment, and that therefore it could only be provided soon enough by immediately enabling the railroad companies to do so, so the prospects for getting it in time for next fall have largely disappeared. I believe it will be generally conceded that under federal control the unification of control has made the existing equipment go further and produce a greater volume of transportation than would be possible under the old form of private management. If, therefore, private management is resumed at a time when it will be impossible to secure the additional equipment necessary to admit of the numerous private managements giving a corresponding total of transportation service, it is evident that the public will pay an additional price through increased shortages in transportation in the next period of heavy business.

When I appeared before the Senate Committee on Interstate Commerce last February I pointed out the difficulties in the way of a transfer back to private management during the period of readjustment and expressed the opinion that the public would be better served, and with less cost, and railroad investors would be better protected, to continue the present federal operation long enough to tide over the readjustment period and also to admit of legislation with greater deliberation after the beginning of the next Presidential term. The Congress, however, has from the time of the first proposal of this plan appeared to be adverse to any procedure other than the adoption at the earliest possible moment of general legislation and the turning back of the railroads to private management under such legislation. Since it would be out of the question for federal control to be successful without the support of Congress, the necessary steps have been taken in accordance with the sentiment and purpose of Congress for the turning back of the railroads on March 1.

Advantages Resulting from Federal Control

In this connection let me say that, despite the widespread fashion of criticising federal control of railroads and attributing to it practically every condition that grew out of the war, my deliberate judgment is that federal control has rendered some very important public services which far outweigh any defects with which it may be chargeable. For one thing, it protected railroad credit through a period of most critical financial difficulty. When we consider on the one hand the precarious situation of public utilities in many parts of the country, and on the other hand the results which the railroad properties have enjoyed during federal control, it must be clear that a highly important service has been rendered in the protection of investment in railroad property and of the due returns therefrom. Equally important results have been obtained from the standpoint of the general public. In a time of great difficulty, and with an amount of equipment which was inadequate even before federal control began, the unified operation of the railroads has produced a total transportation service greater than ever before in the history of the country and has done it with far less congestion and delay than was characteristic of conditions of heavy business under private control. Generally speaking, the period of heaviest business is in the fall months. In these months, both in 1918 and in 1919, the business was heavier than in any corresponding periods prior to the war. A greater volume of traffic was moved and with far less congestion than was characteristic of the conditions of private management. I know on several occasions in the fall months prior to federal control the state of traffic congestion in some parts of the country reached such a state as to constitute a transportation crisis, but these conditions were obviated through the use of the opportunities which came from unified control. I

attribute the achievement entirely to the opportunities which unified control gave and not to any superior wisdom which I claim was possessed by the Railroad Administration.

I want to emphasize the point that the railroads were placed under government control during the war and that the predominant motive during the war was the prompt movement of troops and war supplies. From January 1, 1918, to November 1, 1919, there were 13,446,859 soldiers, sailors and marines moved on the railroads in the United States, and this was equivalent to transporting one passenger 5,917,658,719 miles, thus necessitating the use of 213,749 railroad coaches and Pullmans and the movement of over 18,000 special trains. The civilian inconveniences, which have been dwelt upon so consistently, resulted in a very large measure from the primacy which had to be given to this war object.

Reasons for the Deficit

The fact that there has been a deficit from railroad operations under federal control has been regarded by many as conclusive evidence of the necessity for a precipitate return to private control, but the fact is that the deficit has not been due to excessive costs. The costs have not been relatively greater than in other lines of enterprise. The real reason for the deficit is due to the fact that the prices charged for railroad transportation have not been increased in keeping with the increases in prices of commodities. For the first six months of federal control there was no increase in the rates of transportation. If the increases in rates which were put into effect in the latter part of June, 1918, had been put into effect on January 1, 1918, at the very beginning of federal control, the Class I railroads would have shown a profit of about \$14,000,000 at the end of October, 1919, at the expiration of 22 months of federal control, instead of a deficit of nearly \$500,000,000. In other words, the deficit can fairly be said to have been due to the fact that the increase in rates was necessarily deferred six months. The entire deficit for the period from January, 1918, to October, 1919, both inclusive, for Class I railroads and large terminal companies in federal operation was \$480,000,000, but if the rate increases made in June, 1918, had been effective January 1, 1918, from which time of course the increased expenses were largely effective, the additional revenue, without any increase in operating expenses, would have been \$494,000,000, thus more than offsetting the deficit and leaving a profit of \$14,000,000.

If the Railroad Administration had increased its rates 50 or 60 per cent, which was less than the increase in prices by private industries throughout the country and which, by the way, appears to be in line with the increases in rates now being proposed for railroads in England and in other European countries, handsome profits would have been shown instead of a deficit.

The indications are that, despite all the increases in cost which have been incurred by the Railroad Administration, a continuance of unified control could be made self-supporting upon a very small increase in rates, whereas a return to private management, with the necessity of establishing the credit of a great number of independent railroad companies, would undoubtedly call for a much greater increase in rates if the railroad credit is in fact to be successfully established.

While on the subject of results of the Railroad Administration I wish to correct the radically erroneous impression as to the treatment of labor. The increase in the rates of pay to railroad labor has by no means been out of line with the increases to labor in private enterprises, and in both instances the increases have been due to the conditions created by the war. It is a curious illustration of the aberration of the times that the increase in wages made by the Railroad Administration is regarded as a proof of politics

and inefficiency, while an even greater increase in some of the important industrial enterprises of the country is regarded as a perfectly natural response to business necessities.

Special stress has been laid by some of the critics of the Railroad Administration upon the increase in the number of employees.

This increase is principally accounted for by the establishment of the eight-hour day and involves no increase in the number of hours of labor paid for. Obviously if 80 hours of labor are to be done 10 employees will be required on the basis of an eight-hour day, as compared with only 8 on the basis of a 10-hour day, and yet only 80 hours will be paid for in either case. To a considerable extent it is undoubtedly true that the large number of employees has been due to the loss of experienced employees on account of the war and to the exceptional turn-over of employees which has been a natural characteristic of the industrial change and unrest. In these respects the Railroad Administration does not differ from other industrial enterprises. It is important to bear in mind that the number of hours of work paid for is in the control of the experienced railroad officers, as far as it can be controlled in view of general industrial conditions.

The Central Administration is constantly checking up this situation and bringing to the attention of local officers any cases which arise and which indicate the payment for unnecessary hours of work. The influence of the Central Administration, therefore, is consistently exercised in favor of a reduction in the hours of work paid for rather than in favor of an increase in the hours of work paid for.

No Politics in the Railroad Administration

Let me at this point digress to say that there has never been any solution of either officers or employees in the Railroad Administration for political reasons and that the assumption which is sometimes indulged that governmental activities create unnecessary positions for political reasons is absolutely without any foundation as far as the Railroad Administration is concerned. I do not believe there is a single officer of the Railroad Administration who has sought his position. It is strikingly an institution where the office has sought the man. There has never been any inquiry into the politics of an officer, and as a rule I am not advised as to the politics of the members of my staff or their subordinates, or as to the politics of the officers on the various railroads or their subordinates. Let me emphasize also that throughout federal control railroad operation has been in the hands of skilled railroad officers who have spent their lives in railroad service and, generally speaking, has been in the hands of the very same officers who conducted the same operations prior to federal control and will continue to conduct them after federal control.

Returning to the results of railroad operation under federal control, let me emphasize that the striking respect in which private enterprise has been more effective than the Railroad Administration is that the private enterprise has been so much more efficient in raising the prices which have been imposed upon the public, while the Railroad Administration has endeavored to protect the public and the business of the country from any unnecessary increase in the level of the railroad rate structure. Conditions in the early part of 1919 were so abnormal and unprecedented as to preclude any satisfactory and reliable readjustment of rates. It is thoroughly appreciated that the unfavorable return in the early months of 1919 was very largely, if not almost wholly, due to the abnormal slump in business. If an increase had then been made to produce the profits on the abnormally small business I am satisfied the step would have been exceedingly unjust to the public. The result in the fairly normal months of July to October clearly justified

this prudent policy, because they indicated that in any normal volume of business the rate increase necessary under unified control would have been very much less than was indicated by the abnormal months preceding. The entire increase in rates since 1914 has been on an average for the country only about 33 per cent. In that time the increase in prices of the articles transported has varied from 60 per cent and 80 per cent up to 150 per cent.

Let me in conclusion again remind you of the conditions which prevailed in 1917. We get no clearer or more striking picture of these conditions than that which was presented by the railroad executives to the Interstate Commerce Commission in the late fall of 1917 in behalf of the effort then made to secure an increase in rates. The conditions were then summed up on behalf of the railroad interests as follows:

- (a) Continuous increases in the cost of labor, fuel, supplies, taxes and of obtaining new capital;
- (b) Inability to secure and retain efficient labor;
- (c) Curtailment of maintenance expenses, which curtailment is due in part to inability to secure necessary labor and materials;
- (d) Decrease in net operating income, notwithstanding large increase in operating revenues, in property investment, in carload and in trainload;
- (e) Reduction in surplus, with consequent effect upon the credit of the carriers;
- (f) Inability to secure new capital by the issue of stock, with the consequent weakening effect upon the financial structure;
- (g) Inability to provide improvements and facilities, not only essential for the traffic of today, but equally essential for the traffic of the future.

Let us not forget that conditions of this character were the outgrowth of the imperfect system of management which existed at that time, and let us take the lesson to heart in considering whether there must not be a fundamental reconstruction of the scheme of management and regulation if any of the useful features of private control are to be re-established with any reasonable hope of their being permanently successful.

Discussion of Bridge Specifications

BECAUSE OF THE GREAT IMPORTANCE of the subject and the impracticability of discussing it intelligently on the floor of a convention, the American Railway Engineering Association has adopted a rather unusual method of obtaining a full and thorough discussion of the proposed new specifications for steel railway bridges which were submitted to the association tentatively at the convention in March, 1919. Following the discussion on the floor of the convention, the Committee on Iron and Steel Structures solicited written discussion from the members in order that the report might be subjected to mature consideration during the ensuing year. Communications of this kind were received by the committee from 31 railway bridge engineers, bridge company engineers and others, and because of the value of the material thus obtained, it has been submitted to the members of the association in Bulletin 219 recently issued.

Following the lead of the discussion at the convention, the matters receiving the most extended attention in the written discussion were loads, stresses and impact and their relation to each other with respect to the provision for future ultimate loads. Following the line of his verbal discussion at the convention, P. B. Motley, engineer of bridges, Canadian Pacific, Montreal, advocates the use of

an equivalent uniform live load in place of the present Cooper wheel loading, while J. A. Bohland, bridge engineer of the Great Northern, St. Paul, Minn., takes the opposite stand. Some engineers assume the position that the Cooper wheel arrangement is now obsolete and should be modified, while others are inclined to the opinion that even though the Cooper loading is not ideal, it would be a mistake to make any change. R. L. Huntley, chief engineer, Union Pacific, objects to the establishment of the E-60 Cooper classification as the minimum, because he believes that E-55 will be found adequate in a great many cases. This view is expressed by a number of others, there being the usual anxiety as to possible action by state legislatures in fixing this high loading as a statutory minimum.

Objections are raised also to the new impact and column formulas. With the former, one objection relates to the use of the span length instead of the loaded length in determining the impact ratio to apply to web members. This would have the effect of reducing the size of web members near the center of spans. The same result is produced in another way by the new column formula which gives

lower stresses for lower values of $\frac{1}{r}$ and higher stresses

for higher values of $\frac{1}{r}$ than the old formula. Thus web

compression members, being more slender than other parts of the trusses, would be allowed higher unit stresses than in the old specification. This calls attention to the criticism of the specification made at the convention with respect to the design of structures for future limiting loads. The use of a live load approximating the present day train loading, as provided for in the specifications, has a tendency to make these same members too weak for the future limiting load. It was for this reason that Paragraph 45 was inserted in the specification and this paragraph received a large amount of criticism in the discussion appearing in Bulletin 219. It is also apparent from this discussion that several of the critics did not understand the purpose intended by this clause, which has for its object an arbitrary increase in the size of members which might prove inadequate for the future loading. The common criticism was that the paragraph was awkward and illogical and that its purpose would not be readily understood by those not familiar with the intent.

Objections are raised to the provisions of Paragraph 49, relative to the proportioning of the top flanges of plate girder bridges because the new formula is much more severe than the old one. One criticism is that this formula did not provide sufficient distinction between through and deck bridges, since the deficiency of the bracing of the top flange in the latter is much more efficient than in the former.

Senator Harding on Anti-Strike Bill

SENATOR WARREN G. HARDING of Ohio, a candidate for the Republican presidential nomination, in a letter to E. J. Miller, secretary of a railway union at Newark, Ohio, defended his course in supporting the anti-strike section in the Cummins railroad legislation bill and defined his position toward organized labor.

"Organizatoin and collective bargaining, under wise leadership, have done more to advance the cause of labor than all other agencies combined, and any one who thinks to destroy sane unionism, by legislation or otherwise, is blind to conditions firmly established, and is insensible to a public sentiment which is deliberate and abiding," he said.

"But the advancement of unionism is one thing and the domination of organized labor is quite another. I subscribe to the first and oppose the latter. I do not believe in any class domination, and the long fight to remove the domination of capital, now fairly won, is lost if labor domination is substituted in its stead.

"This brings me to the specific reply to your inquiries relating to the Cummins bill and its anti-strike clause. I voted for the bill because I believed it to be the best measure presented to the Senate for the restoration of the railway lines to their owners.

"I favored the anti-strike clause because it applies to a public service under governmental regulation, in which Congress exercises its power to limit the return on capital invested, fixes rates at which the public must be served, enacts the conditions under which service must be rendered, and, finally, in the anti-strike clause, provides a capable tribunal for the adjustment of all labor grievances, so that no interruption in transportation need be apprehended.

"In our modern life all the people are dependent on railway transportation for food, comfort, health, security and the necessary materials for productive activity and attending livelihood. It has become a prime necessity. This transportation is a public service and is no longer a speculative private enterprise. It is not competitive, except as to quality of service. It is limited in profit and the investment comes under governmental restrictions. Expenditures are limited because earnings are limited.

"All this assumption in regulation is designed for the public good. Is it not wholly consistent and fair, then, that the same governmental authority should prohibit the paralysis of the public service, so long as it provides a competent tribunal to adjust all labor grievances and awards to railway employees every just consideration? I believe it not only consistent but a distinct advance in behalf of the public and the workmen alike.

"If the government, representing all the people, can not guarantee transportation service under any and all conditions, it fails utterly. If that same government cannot provide just consideration of the workmen operating the transportation systems it fails again. It ought to and must do both.

"It is far afield from the main question to talk about enslaving the laboring man. Nothing is further from the truth. Nobody holds such a desire or the semblance of such a thought.

"The law specifically preserves to the individual his right to quit his employment. It provides the government's guaranty of just treatment while he remains in the railway employment. Government itself is the lawful agent of justice.

"There has been no intent to interfere with the plan of collective bargaining in competitive, private enterprise. This provision deals solely with a public service, the continued and uninterrupted maintenance of which is vital to the whole people, and in the one act we pronounce public welfare paramount and at the same time commit the government to a plan of awarding full and prompt justice to every man engaged in the great and complex operation.

"I do not assert that the Cummins bill is perfect but it proclaims our government to be jealous as concerned about a service essential to the public and solemnly commits the same government to the just treatment of the men who perform that service.

"I do not know that such a law will prevent railway strikes, but I do know that it ought, and I think the great rank and file of railway workers ought to welcome it. It suggests the nation-wide aspiration for industrial peace with unflinching justice to all concerned, which is in the heart of the American millions today."

Frank Trumbull Retires from the C. & O.

Is Succeeded as Chairman of the Board of Directors of That
Road by H. E. Huntington

H. E. HUNTINGTON, nephew of the late Collis P. Huntington, and a director of the Chesapeake & Ohio, has been elected chairman of the board of directors of the Chesapeake & Ohio and of the Hocking Valley, succeeding Frank Trumbull, resigned. Mr. Trumbull has by no means retired from active work. He is the chairman of the board of the Missouri, Kansas & Texas, and will, presumably, see that company through its reorganization. He is a director of the National City Bank of New York, chairman of the financial committee of the board of directors of the New York City Y. M. C. A., and an active trustee of the Tuskegee Institute, besides having broad personal interests.

Mr. Huntington will be 70 this month. He retired from active work ten years ago, and his acceptance of the position of chairman of the board of directors of the Chesapeake & Ohio and of the Hocking Valley, marks a continuing interest in these properties rather than any return to harness. George W. Stevens is now federal manager of the Chesapeake & Ohio, and will probably be elected president when the road is returned to its owners. C. E. Graham is now vice-president of the corporation, and on him will, in all probability, devolve much of the hard work which Mr. Trumbull is laying down.

The election of Mr. Huntington has a special interest for the older generation of railroad men. His uncle built a considerable portion of the road, and he, himself, from 1880, was superintendent of construction of the Huntington lines being built between New Orleans and Louisville, and was in direct charge of the Chesapeake & Ohio Southwestern. As a matter of fact, most of his railroad work was in the territory of the Chesapeake & Ohio. In 1884 he was superintendent of the Kentucky Central, which was being operated by the Chesapeake & Ohio. He became receiver of the Kentucky Central, and later its vice-president and general manager, holding this position until the road was sold to the Louisville & Nashville in 1890. During the time that he was an officer of the Kentucky Central, he had charge of the construction company which built the lines through Covington, Ky., and Cincinnati, Ohio, and which built the Ohio River Bridge. Mr. Huntington went to California in 1892, and became first assistant to the president of the Southern Pacific, and in 1900 was made second vice-president, and then first vice-president. He resigned from this position in 1904, but was active in business affairs until the year 1910. He was then 60 years of age and he quite definitely retired from the direct work of the management of the properties in

which he, of course, retained a large financial interest.

Frank Trumbull has been at work since he was a boy of 12. He was born in Arcadia, Mo., in 1858. His father was a minister and of an old New England family; while the family was poor and the boy had to begin earning his living at 12, he had inherited or acquired the foundations of a liberal education. Whether it was inherited or acquired, however, he developed a remarkable gift for writing terse, crisp English, lightened by a sense of humor. This sense of humor, unblunted by a life of hard work and health that has been far from good, has been a marked quality.

During the years when he would ordinarily have been going through the seventh and eighth grades, and the first two years of high school, Frank Trumbull was earning his living working first as a water boy and then at other jobs on the new railroads in the Southwest. When he was 16, he was taken in as a clerk in the controller's office of the Missouri, Kansas & Texas (it was 38 years later that he was elected chairman of the board of directors of this company), and for 14 years he worked up, step by step, through the accounting offices of the Katy and the Missouri Pacific, until in 1886, he was made auditor of the Texas & Pacific.

He went to Colorado in 1888, and for five years was in the wholesale coal business, and during this time made reports for New York and London bankers on various western railroad properties.

In 1893, he was appointed receiver and general manager of the Union Pacific, Den-

ver & Gulf. This was the bankrupt branch of the Union Pacific which Mr. Trumbull developed, extended, connected with the Fort Worth & Denver City, and made into the Colorado & Southern. In this work he was associated with Grenville M. Dodge, and later with Edwin Hawley and with the Huntingtons. The road which Mr. Trumbull took charge of had about a thousand miles of line, and earned in 1893, \$3,500 a mile gross. By 1899, the road had been made an independent property and was organized as the Colorado & Southern. Mr. Trumbull was elected president, with Grenville M. Dodge as chairman of the board. B. L. Winchell was vice-president and traffic manager. Harry Bronner was secretary and treasurer, and E. J. Berwin and H. Walters, with whom Mr. Trumbull had been associated in the East were on the board of directors.

At that time the Colorado & Southern had a total mileage of 762 standard gage miles, and 380 narrow gage miles. In the fiscal year ending June 30, 1900, the total operating revenues amounted to \$4,238,000, and operating expenses to



H. E. Huntington

\$3,133,000. Earnings were at the rate of \$3.712 per mile of road. It was not until 1902 that Edwin Hawley became a member of the board of directors, but Mr. Hawley and Mr. Trumbull retained their interest in the company until Mr. Trumbull effected the sale of a controlling part of the stock to the late James J. Hill. This sale took place in 1909. The total mileage operated June 30, 1908, was 1,952 miles. The total operating revenues amounted to \$14,281,000, and the operating income amounted to \$4,635,000. Operating revenues amounted to \$7,393 per mile. The company had no floating debt, and was paying regular dividends on its first and second preferred stock.

In 1908, and when the Colorado & Southern sale was carried out, Mr. Trumbull was fifty, and his inclination probably was to retire. He had had many years of exceedingly hard work, and a great deal of sickness. It was just prior to this time that the Pennsylvania Railroad had divested itself of its interest in the stock of the Chesapeake & Ohio, and this stock was being held by the banking firm of Kuhn, Loeb & Company. Mr. Trumbull was persuaded by his associates to join them in the purchase of this stock and to become chairman of the board of directors of the company. A controlling interest in the Hocking Valley was for sale, and Mr. Trumbull bought this for the Chesapeake & Ohio. About the same time Edwin Hawley put through negotiations for the purchase by the Chesapeake & Ohio, of the line from Cincinnati to Chicago which is now known as the Chicago Line of the Chesapeake & Ohio. The Hocking Valley was a valuable investment for the Chesapeake & Ohio. The Chicago Line did not prove so valuable.

The development of the Chesapeake & Ohio was somewhat slow, and in 1910 the property had difficulty in raising all of the new capital which could have been spent advantageously on the road. The stock which Mr. Trumbull and his associates bought, was not a majority of the total, and the other interests in the property retained a voice in its management. In the broader policies and developments, however, Mr. Trumbull's plans have been carried out and the Chesapeake & Ohio to-day is a magnificent railroad property with the earning capacity limited only by the general railroad situation, and its ability to raise and spend money for additional railroad facilities.

Frank Trumbull was largely instrumental in the formation of the Railway Executives Association which was originally the advisory committee of railway executives and of which he was the first chairman. His work in this connection has been that of a far-seeing statesman, ready to recognize the changes in public sentiment and in the conditions of railroad management and operation.

In his attitude toward the present railroad problem, there is brought up a side of his character which is not easy to fully understand and is harder to adequately describe. The difficulty lies in the fact that high idealism generally con-

notes a certain lack of shrewd practicality. High idealism, however, and shrewd practicality can be combined in the same man, as for instance in Lincoln. They are so combined in Frank Trumbull. It might be said that the idealism is shown in what he himself does, and the shrewd practicality in his ability to meet every man on his own ground. The building of the Colorado & Southern, with all that it meant to the development of the State of Colorado, was the working out of a high ideal, in the practical fashion which used to be considered typically American. In his discussion, however, of the present railroad problem, Mr. Trumbull never for an instant lets a belief in the value of private initiative, individual endeavor, successful competition, and the working out of the natural laws of economics and the survival of the fittest, interfere with his recognition of the fact that these are not the principles on which the American railroad question will be solved. He deals with public opinion and political bias as he finds it, and in a practical and hard headed way.

Perhaps there is something of the same contrast of characteristics in his relations with his subordinates, his associates and his business competitors. With his subordinates, he is considerate to an extraordinary degree. Probably himself sensitive, he is peculiarly thoughtful of the feelings of others. His business relations with his subordinates and with his associates are simple and straightforward, but he has the wholesome respect of the most domineering of the men who have been prominent in building up this country. When the question of the sale of the Chesapeake & Ohio stock was under discussion, it was said that the older J. P. Morgan said to Mr. Trumbull: "You people are from the West, we don't know you. We don't know what trouble you are going to make down here." Mr. Trumbull replied by telling the story of the small country boy who went to his first dance. He stood about for a little while and picked out the girl he

thought prettiest, and went up to her and asked her for a dance. She replied that she did not know him and that she hadn't met him; but he assured her that that was all right, and that he was taking as much of a chance as she was.

Mr. Trumbull negotiated the sale of the stock of the Colorado & Southern to the late James J. Hill, and James J. Hill was in the habit of getting pretty much the best of every bargain. But in the sale and purchase of the Colorado & Southern, it can be said safely that Mr. Trumbull did not get the worst of the bargain. There are many men in New York and in other parts of the country with impregnable credit, but it cannot be said of all of them as it can of Mr. Trumbull, that the spirit of an agreement will always be as absolutely binding as the letter.

Sixty passengers injured by a hurricane is the substance of a cable despatch from Valencia, Spain, January 5, reporting the overturning of a passenger train near Denia, by a hurricane, on the 3rd of January.



Frank Trumbull

A Plan for the Adjustment of Labor Disputes

Industrial Conference Outlines Tentative Proposals and Asks for Constructive Criticism

THE INDUSTRIAL CONFERENCE, convened by the President in Washington on December 1, has issued a preliminary statement in the desire that certain tentative proposals be given considerate study by interested individuals and organizations throughout the country. It will reassemble on January 12 and will then carefully consider any constructive criticisms that may be submitted to it.

The conference does not deem it useful at this time to enter upon a discussion of the causes of industrial unrest. It believes rather that its most important immediate contribution is the suggestion of practical measures which will serve to avert or postpone industrial conflicts.

"Our modern industrial organization, if it is not to become a failure, must yield to the individual a larger satisfaction with life," the introductory statement says. "It makes possible a greater production of material things. But we have grown so accustomed to its complexity that we are in danger of forgetting that men are today more dependent on each other than ever before. The spirit of human fellowship and responsibility was easier to maintain when two or three worked side by side and saw the completed product pass from their hands. Yet their co-operation was actually less necessary because each by himself was more nearly capable, if circumstances demanded, to meet the needs of life.

"Today we have a complex interweaving of vital interests. But we have as yet failed to adjust our human relations to the facts of our economic interdependence. The process toward adjustment, though slow, nevertheless goes on. The right relationship between employer and employee in large industries can only be promoted by the deliberate organization of that relationship. Not only must the theory that labor is a commodity be abandoned, but the concept of leadership must be substituted for that of mastership. New machinery of democratic representation may be erected to suit the conditions of present industry and restore a measure of personal contact and a sense of responsibility between employer and employee. The more recent development of such machinery with the co-operation of organized labor is a hopeful sign. But back of any machinery must be the power which moves it. Human fellowship in industry may be either an empty phrase or a living fact. There is no magic formula. It can be a fact only if there is continuous and sincere effort for mutual understanding and in unflinching recognition that there is a community of interest between employer and employee.

"Pending the growth of better relationships between employers and employees, the practical approach to the problem is to devise a method of preventing or retarding conflicts by providing machinery for the adjustment of differences. The conference believes that it is possible to set up a more effective series of tribunals for the adjustment of disputes than at present exists. To be successful, such tribunals must be so organized as to operate promptly as well as impartially. There must be full participation by employers and employees. There must be representation of the public to safeguard the public interest. The machinery should not be used to promote unfairly the interests of organizations, either of labor or of capital. The plain fact is that the public has long been uneasy about the power of great employers; it is becoming uneasy about the power of great labor organizations. The community must be assured against domination by either. On the other hand, there

must be equal assurance that such machinery will not be used to discriminate against organizations of employees or of employers. Both should be protected. The right of association on either side should not be affected or denied as a result of the erection of such tribunals.

"The plan which follows does not propose to do away with the ultimate right to strike, to discharge, or to maintain the closed or the open shop. It is designed to bring about a frank meeting of the interested parties and cool and calm consideration of the questions involved, in association with other persons familiar with the industry.

"The plan is national in scope and operation, yet it is decentralized. It is different from anything in operation elsewhere. It is based upon American experience and is designed to meet American conditions. To facilitate discussion, the plan submitted, while entirely tentative, is expressed in positive form and made definite as to most details." The statement of the plan is in part as follows:

Plan for Boards of Inquiry and Adjustment

There shall be established a National Industrial Tribunal, and Regional Boards of Inquiry and Adjustment.

The National Industrial Tribunal shall have its headquarters in Washington, and shall be composed of nine members chosen by the President and confirmed by the Senate. Three shall represent the employers of the country and shall be appointed upon nomination of the Secretary of Commerce. Three shall represent employees and shall be appointed upon nomination of the Secretary of Labor. Three shall be representatives of the public interest. Not more than five of the members shall be of the same political party.

The tribunal shall be, in general, a board of appeal. Its determinations on disputes coming to it upon an appeal shall be by unanimous vote. In case it is unable to reach a determination, it shall make and publish majority and minority reports which shall be matters of public record.

The United States shall be divided into a specified number of industrial regions. The conference suggests 12 regions with boundaries similar to those established under the Federal Reserve system, with such modifications as the industrial situation may make desirable.

In each region the President shall appoint a regional chairman. He shall be a representative of the public interest, shall be appointed for a term of three years and be eligible for reappointment.

Whenever in any industrial region, because of the multiplicity of disputes, prompt action by the Regional Board is impossible, or where the situation makes it desirable, the National Industrial Tribunal may in its discretion choose one or more vice-chairmen and provide for the establishment under their chairmanship of additional regional boards.

Panels of employers and employees for each region shall be prepared by the Secretary of Commerce and the Secretary of Labor, respectively, after conference with the employers and employees, respectively, of the regions. The panels shall be approved by the President.

Whenever a dispute arises in a plant or group of plants which is not settled by agreement of the parties or by existing machinery, the chairman may on his motion, unless disapproved by the National Industrial Tribunal, and shall at the request of the Secretary of Commerce or the Secretary of Labor or the National Industrial Tribunal, request each side concerned in such dispute to submit it for adjustment

to a Regional Board of Adjustment. To this end each side shall, if willing to make such submission, select within not less than two nor more than seven days, at the discretion of the chairman, a representative.

When both sides shall have selected their representatives the chairman shall take from the top of the panels for the industry concerned, or in the case of employees for the craft or crafts concerned, names of employers and employees, respectively. The representatives selected by the two sides shall be entitled to a specified number of peremptory challenges of the names so taken from their respective panels. When two unchallenged names of employers and employees shall have been selected in this manner, they, with the chairman and the representatives selected by the two sides shall constitute a Regional Board of Adjustment.

The appointment of representatives of both sides shall constitute an agreement to submit the issue for adjustment and further shall constitute an agreement by both sides that they will continue, or reestablish and continue, the status that existed at the time the dispute arose.

The Board of Adjustment so constituted shall proceed at once to hear the two sides for the purpose of reaching a determination. Such determination must be by unanimous vote. In case the board is unable to reach a determination the question shall, unless referred to an umpire as provided in section 9, pass upon appeal to the National Industrial Tribunal.

If either side to the dispute fails, within the period fixed by the chairman, to select its representative, the chairman shall proceed to organize a Regional Board of Inquiry. Such Regional Board of Inquiry shall consist of the regional chairman, two employers selected in the manner specified from the employers' panel, and two employees selected in like manner from the employees' panel and of the representative of either side that may have selected a representative and agreed to submit the dispute to the board. If neither side shall select a representative within the time fixed by the chairman, the Board of Inquiry shall consist of the chairman and the four panel members only.

Upon the selection of a representative, within the specified time, the side concerned shall be entitled to the specified number of peremptory challenges as provided above. The representative shall have the right to sit on the Board of Inquiry and to take full part as a member of such board in the proceedings thereof.

The Board of Inquiry as so constituted shall proceed to investigate the dispute and make and publish a report, or majority and minority reports, of the conclusions reached, within 5 days after the close of its hearings and within not more than 30 days from the date of issue of the original request by the chairman to the two sides to the dispute, unless extended on unanimous request of the board or the National Industrial Tribunal. It shall transmit copies of this report or reports to the Secretaries of Commerce and of Labor, respectively, and to the National Industrial Tribunal, where they shall be matters of public record.

At any time during the progress of the inquiry at which both sides shall have selected representatives and agreed to submit the dispute for adjustment, the Board of Inquiry shall become a Board of Adjustment by the admission to membership on the board of such representatives. The side or sides which appoint representatives after the date fixed in the original request of the chairman shall, because of its delay, after a reduction in the number of peremptory challenges to which it otherwise would have been entitled.

The Board of Adjustment so constituted shall proceed to the determination of the dispute as though it had been organized within the period originally fixed by the chairman.

When a Regional Board of Adjustment is unable to reach a unanimous determination it may by unanimous vote

select an umpire and refer the dispute to him with the provision that his determination shall be final and shall have the same force and effect as a unanimous determination of such Regional Board.

Whenever the questions involved in a dispute extend beyond the boundaries of a single region, the regions to which the dispute extends shall, for the purpose of such dispute, be combined by order of the National Industrial Tribunal, which shall designate the chairman of one of the regions concerned to act as chairman in connection with the dispute in question.

Two employer members and two employee members shall be chosen from the combined panels of the regions involved in the dispute under rules and regulations to be established by the National Industrial Tribunal. The members representing the two sides to the dispute shall be chosen as in the case of a dispute in a single region.

A Regional Board of Inquiry or of Adjustment constituted for a dispute extending beyond the boundaries of a single region shall have the same rights and powers conferred upon a Regional Board for a single region.

Whenever an agreement is reached by the parties to a dispute or a determination is announced by a Regional Board of Adjustment, or by an Umpire, or by the National Industrial Tribunal, the agreement or determination shall have the full force and effect of a trade agreement which the parties to the dispute are bound to carry out.

In connection with their task of inquiry and adjustment, the Regional Boards and the National Tribunal shall have the right to subpoena witness, to examine them under oath, to require the production of books and papers pertinent to the inquiry, and their assistance in all proper ways to enable the boards to ascertain the facts in reference to the causes of the dispute and the basis of a fair adjustment. Provision shall be made by law for the protection of witnesses and to prevent the misuse of any information so obtained.

In the presentation of evidence to the tribunal and the boards each side shall have the right to present its position through representatives of its own choosing.

The Secretary of Commerce and the Secretary of Labor in making nominations for the National Industrial Tribunal and in preparing and revising the regional panels of employers and employees shall from time to time develop suitable systems to insure their selections being truly representative.

The National Industrial Tribunal, the Regional Boards of Adjustment, and the Umpires shall in each of their determinations specify the minimum period during which such determinations shall be effective and binding. In case of emergency a Regional Adjustment Board or the National Industrial Tribunal may, after hearing both sides, after its determination by abridging or extending the period specified.

The terms of office of members of the National Industrial Board shall be six years; at the outset three members, including one from each group, shall be appointed for a term of two years, three members for a term of four years, and three members for a term of six years; thereafter three members, one from each group, shall retire at the end of each period of two years. Members shall be eligible for reappointment.

The regional panels provided for in section 5 shall be revised annually by the Secretaries of Commerce and of Labor, respectively, in conference with the employers and employees, respectively, of each region.

The establishment of the National Industrial Tribunal and the Regional Boards described shall not affect existing machinery of conciliation, adjustment, and arbitration established under the Federal Government, under the governments of the several States and Territories or subdivisions thereof, or under mutual agreements of employers and employees.

Any industrial agreement made between employers and employees may, by consent of the parties, be filed with the National Industrial Tribunal. Such filing shall constitute agreement by the parties that in the event of a dispute they will maintain the status existing at the time the dispute originated until a final determination, and that any dispute not adjusted by means of the machinery provided through the agreement shall pass on appeal to the National Industrial Tribunal for determination, as in the case of a dispute submitted on appeal from a Regional Board.

Objects of Plan

The main objects of the above plan are to secure national co-ordination and to stimulate the formation of bodies for local adjustment. The requirement of unanimity of agreement has by experience in the United States proved remarkably successful and should assure such confidence that neither side can rightfully refuse to submit to adjustment. A precedent condition of such submission is that the interruption of production shall be delayed. The frank meeting of the parties in controversy together with other men skilled in questions at issue always give promise of settlement. On the other hand, refusal to submit to the board not only inaugurates a legal inquiry but also prejudices the obstinate party or parties in public opinion. Moreover, the fact that membership on the board of inquiry is available to either party to the conflict singly would tend further to weaken the position of the other. When both parties join, the board at once becomes a Board of Adjustment, and conflict ceases by agreement until a determination is reached.

Statement as to Public Utility Industries

The plan here proposed presents greater difficulties in application to certain public utilities than to competitive industry. The continuous operation of public utilities is vital to public welfare. As the capital invested is employed in public use, so is the labor engaged in public service, and the withdrawal of either with the result of suspending service makes the people the real victim. While continuous operation of all utilities is conducive to the general convenience of the people, that of some of them is essential to their very existence. Of the latter class the railways are a conspicuous example and bear the same relation to the body politic as do the arteries to the human body. Suspension produces practical social and economic anarchy and may impose hardship even to the point of starvation upon large sections of the community. The interruption in such essential public utilities is intolerable.

The conference believes that a plan of tribunals or Boards of Adjustment and Inquiry should be applied to public utilities, but in the adaptation of the plan two problems present themselves. First, governmental regulation of public utilities is now usually confined to rates and services. The conference considers that there must be some merging of responsibility for regulation of rates and services and the settlement of wages and conditions of labor. Such co-ordination would give greater security to the public, to employee, and to employer. Second, is the problem whether some method can be arrived at that will avert all danger of interruption to service. These matters require further consideration before concrete proposals are put forward.

Statement as to Government Employees

The government is established in the interests of all the people. It can be conducted effectively only by those who give to its service an undivided allegiance. The terms and conditions of employment in the government service are prescribed by law. Therefore no interference by any group of government employees, or others, with the continuous operation of government functions through concerted cessation of work or threats thereof can be permitted.

The right of government employees to associate for mutual protection, the advancement of their interests, or the presentation of grievances can not be denied, but no such employees who are connected with the administration of justice or the maintenance of public safety or public order should be permitted to join or retain membership in any organization which authorizes the use of the strike or which is affiliated with any organization which authorizes the strike.

The conference is not now expressing an opinion upon the propriety of the affiliation of other classes of government employees with organizations which authorize the use of the strike.

The principles above stated are not to be construed as inconsistent with the right of employees individually to leave the public service. It is, further, an essential part of the application of these principles that tribunals shall be established for prompt hearing of requests and prompt remedy of grievances. The legislation of the Nation, the states, and the municipalities should be improved in such a way as to prevent delay in hearings and to enable speedy action when there are grievances.

Further Work of the Conference

On reconvening the conference will continue its consideration of tribunals for the furtherance of industrial peace in general industry in the light of whatever criticisms and suggestions the publication of its tentative plan may call forth. It will receive reports of investigations that are being made for it. On the basis of such reports and of further study of these and the other subjects within its field, the conference hopes that it may be able to contribute something more toward the better industrial relations described in the words addressed to it by the President when he called it into being—relations in which "the workman will feel himself induced to put forth his best efforts, the employer will have an encouraging profit, and the public will not suffer at the hands of either class." To this end it invites co-operation of all citizens who have at heart the realization of this ideal of a better industrial civilization.

Freight Traffic Movement and Car Performance

THE NET TON MILES of revenue and non-revenue freight handled by the railroads under federal control in November aggregated 32,539,248,000, a decrease of 8.5 per cent as compared with November, 1918, according to the monthly report of the Operating Statistics Section. Train miles decreased 3.9 per cent and total car miles 2.9 per cent. The net ton miles per train mile decreased from 686 to 653 and the net ton miles per loaded car mile from 29.5 to 26.2. The percentage of unserviceable freight cars was 6.3 as compared with 5.6. The car miles per car day averaged 23.3 as compared with 24.6 and the net ton miles per car day averaged 436 as compared with 488, a decrease of 10.7 per cent.

For the eleven months ended November 30 the net ton miles aggregated 361,331,207, a decrease of 10.4 per cent.

The Union station project at Cleveland, Ohio, has been deferred, possibly killed, by the refusal of the Pennsylvania to join in the enterprise. The city council on December 29, by a majority of one vote, refused to amend the ordinance (authorizing the establishment of a station on the public square) so as to allow the Cleveland Union Terminals Company to proceed with the improvement without the co-operation of the Pennsylvania.

Weekly Traffic Report

ACCORDING to a report on traffic conditions for the week ended December 30, 1919, made to Director General Hines, revenue freight loadings and receipts from connections for the various regions were as follows:

Eastern region—Revenue freight loaded, 200,658 cars, an increase of 6,931 cars over last year; receipts from connections, 225,115 cars, a decrease of 13,083 cars. **Allegheny region**—Revenue freight loaded, 181,431 cars, a decrease of 90 cars; receipts from connections, 153,289 cars, a decrease of 18,930 cars. **Pocahontas region**—Revenue freight loaded, 25,595 cars, an increase of 7,250 cars; receipts from connections, 13,635 cars, a decrease of 2,042 cars. **Southern region**—Revenue freight loaded, 123,937 cars, an increase of 11,822 cars; receipts from connections, 74,079 cars, an increase of 6,176 cars. **Northwestern region**—Revenue freight loaded, 105,845 cars; receipts from connections, 73,508 cars, an increase of 3,333 cars. **Central Western region**—Revenue freight loaded, 125,607 cars, an increase of 25,817; receipts from connections, 65,395, an increase of 6,545. **Southwestern region**—Revenue freight loaded, 63,625, an increase of 8,755; receipts from connections, 51,782 cars, an increase of 9,509.

A summary of the report follows:

Eastern Region.—Business conditions are improving generally and increased activities are noticeable in practically all branches of trade. Some industries are still affected by shortage of fuel and operating below normal capacity. There is continued improvement in the iron and steel situation, reports indicating 131 pig iron furnaces in blast, 56 out, an increase of 7 in blast over the previous week. Embargo on less carload freight destined Detroit has been cancelled by all lines, as situation is practically cleaned up. Regular and Christmas travel this year was very heavy, the business on the Monday and Tuesday preceding Christmas being particularly voluminous.

Allegheny Region.—Bituminous coal loading for the week showed an increase of 10,579 cars over the previous week, but there was some decrease in the loading of anthracite coal, which, however, was partly accounted for by extremely cold weather during the early part of the week. Increased shortage of box, grain, coal, double-deck stock and gondola cars, caused probably by cold weather and congestion, which affected movement westbound through Pittsburgh. There was some slight improvement in the refrigerator and flat-car situation. Reports indicate that 105 pig iron furnaces in blast, with 86 out of blast, which is a gain of two stacks over the previous week. Passenger travel has been exceedingly heavy, especially long distance travel during Christmas holidays.

Pocahontas Region.—With the exception of tidewater coal dumping, business showed a substantial decrease under the preceding week, due to car shortage and usual let-up in shipping incident to the holiday season. Account export coal restrictions, consignments of coal West were very heavy, but arrangements have now been made to issue permits for a limited tonnage of export coal. Christmas travel, especially that from schools, has been large, but the military movement has now been reduced to normal.

Southern Region.—Box car situation is slowly improving, but still unable to meet all requirements promptly. Shortage of open-top cars continues. Southern Pine Association reports balance of orders on hand December 22 22,503 cars. Shipments for the last week amounted to 2,573 cars, while orders were received for 2,952. There is continued improvement reported from Birmingham district in the pig iron situation, both production and demand being heavy. Twenty-six furnaces in blast and 15 out. There is an active movement of cotton factory products and mills generally

operating on full time. Construction of a number of additional cotton mills in Carolina territory is reported.

Northwestern Region.—Business conditions generally continue to be affected seriously by the car shortage and severe weather, particularly in Pacific Northwest, but there is a healthy undercurrent and the amount of business being handled is limited by car supply and ability of carriers to move freight. Manufacturers, shippers and producers are unusually optimistic as to the future. While the iron ore shipping season has closed, there is much activity at all mines preparatory to very large shipments in 1920. Passenger traffic has held up very well, notwithstanding curtailment in service and irregular schedule caused by unprecedented cold weather for this season of the year.

Central Western Region.—Coal production during the week was exceptionally large, the loading being 54 per cent more than the same period of last year and 148 per cent more than the previous week. Wheat acreage sown in Missouri this fall is estimated to be 40 per cent less than last year and Kansas 21 per cent less. It is estimated that the far Western states will produce 35,400,000 boxes of apples this year, as against 143,100,000 boxes last year. With return of normal passenger train service travel has again been extremely heavy, particularly to California.

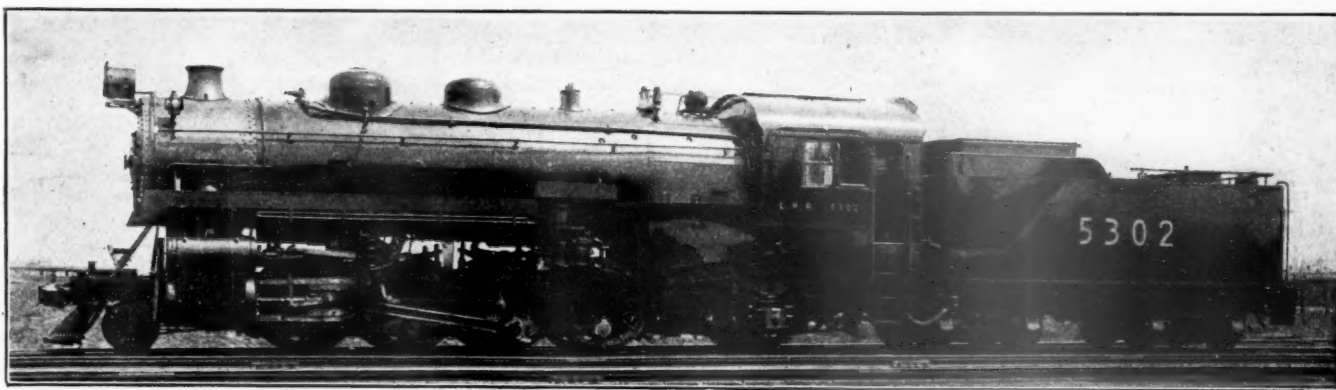
Southwestern Region.—Retailers report an exceedingly heavy holiday business, well above the volume of last year. Unfavorable weather conditions have interfered with fall plowing, resulting in a large decrease in acreage seeded to winter wheat as compared with last year. Decrease in Arkansas estimated at 200,000 acres. Grain Corporation is making a special effort to move large quantities of wheat from elevators at Omaha, Neb., and Wichita, Kan., in order to relieve the elevators and bring additional grain in from country stations. Regular passenger travel, both local and interline, was very good, and holiday travel was exceedingly heavy.

Fuel Situation.—Considering Christmas holidays, production of approximately eight million tons was good. There has been some necessary delay in Western regions disposing of late shipments of Eastern coal during strike, account local coals being available at less than the Eastern coal. Open top equipment being returned slowly by Western roads, resulting in some car shortage in Eastern regions. No accumulation coal on wheels at tidewater. Restricted dumping of coal for export being permitted to meet emergency requirements foreign countries, as recommended by state department. Coal production again sufficient to meet current requirements. Anthracite: Car supply good and production up to usual holiday output.



Photo from International

One of the Reasons the Trans-Siberian Has Not Been a Success in Recent Months



New Canadian Pacific Locomotive for Freight Service

Mikado Type Locomotive for Freight Service

Canadian Pacific Builds New Equipment—Total Weight,
320,500 Lb.; Tractive Effort, 56,000 Lb.

By W. A. Newman

Engineer Locomotive Construction, Canadian Pacific

THE LOCOMOTIVE BUILDING program now being carried out by the Canadian Pacific includes four new types of locomotives; a Mikado type locomotive having a tractive effort of 56,000 lb., two classes of Pacific type locomotives with 43,700 and 42,600 lb. tractive effort respectively, and a Santa Fe type locomotive with a tractive effort of 66,000 lbs. All of these locomotives have been designed by the mechanical engineering department of the Canadian Pacific and are being constructed at the Angus shops in Montreal.

The initial order of 10 Mikado type locomotives has already been completed and one of them is described in this article. The other new types of locomotives are now building and will be described in later issues.

The design of the Mikado locomotives is largely based on the experience obtained from the earlier Mikado type which was designed and constructed by the Canadian Pacific in 1912. There are no radical departures from what is commonly accepted as standard practice. Close attention has, however, been paid to the design of every detail and no effort has been spared to produce a common-sense locomotive which will give reliable and efficient service.

The locomotives have a total weight of 320,500 lb., with 235,000 lb. on the driving wheels, which gives a factor of adhesion of 4.18. The cylinders are 25 in. by 32 in., driving wheels 63 in. outside diameter, which with a normal boiler pressure of 200 lb. per sq. in., gives a maximum calculated tractive effort of 56,000 lb.

The Boiler

The boilers are of the extension wagon bottom type, and are the first of this kind to be used on Canadian Pacific locomotives. This type of construction was adopted for several reasons; the steam dome can be located on the second course, which simplifies the seam construction on the third course; the standpipe is further away from the crown sheet where the greatest ebullition occurs; it shortens the dry pipe and consequently the length of the steam passage, and provides a greater steam storage space, which should be of material advantage in increasing superheater efficiency.

The boiler design is the result of a very careful study

of boiler proportions and construction, every care being taken to insure ample steam generating capacity, combined with easy steaming qualities. The smallest details of construction were given close attention with ease of maintenance in view.

The capacity of the boiler in relation to the cylinder requirements is 102.5 per cent, based on Cole's ratios. The length of tubes is 18 ft. 6 in., which is a close approximation of the most efficient ratio of tube length to diameter. A 28-in. barrel combustion chamber is used, this being the first combustion chamber of this type on the Canadian Pacific. The mudring ends are of cast steel welded to wrought iron side pieces. The ends have drop corners to allow through riveting for the corner fastening of the inside firebox sheet.

The Frames

The frames are a little heavier than is usually found in general locomotive practice. This is chiefly on account of the difficulty experienced with frame breakages, particularly in sections of Canada where there are extremely low winter temperatures. The frames are of the single front rail type and it has been the experience of the Canadian Pacific that the majority of breakages with such frames come directly behind the cylinders. This apparently has been largely due to insufficient fastening to the cylinders and on account of the twisting strains set up due to the narrow bolting face of the cylinders in comparison with the total depth of the frame through the pedestals. In an attempt to correct this, a 15-in. depth of frame section at the back of the cylinders has been used and an extension lug carried forward from the top rail of the frame, which engages with and bolts to a vertical lug on the back wall of the cylinder casting. This gives a total vertical bolting face at the back of the cylinders of 29½ in., which it is expected will effectively counteract any twisting strain to which this section of the frame will be subjected. This construction is shown in detail in the illustrations.

In addition to being bolted to the usual side vertical bolting face underneath the cylinders, each frame is further secured by being bolted through a casting which extends between the locomotive frames and bears against extension lugs at the center of the cylinder castings. These lugs

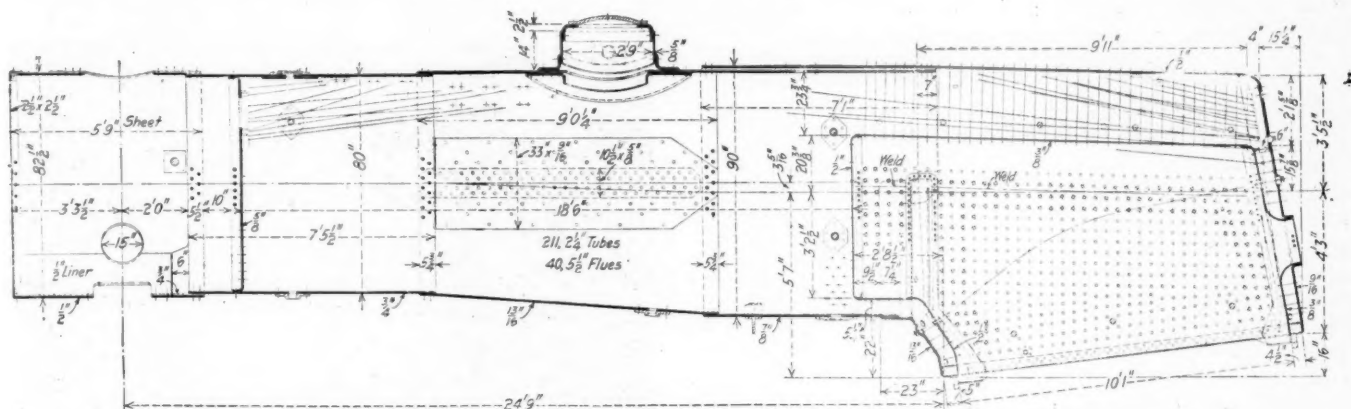
have a tapered face, and the whole casting is first driven in place, secured by vertical bolts, and then bolted horizontally through the frame and cylinders.

The frames are of a uniform width of 6 in. throughout. The depth of section at the top of the pedestal is $6\frac{3}{4}$ in., the minimum depth of the top rail between pedestals $5\frac{3}{4}$ in., and the minimum depth of the bottom rail $4\frac{1}{2}$ in.

Trailing Truck

The locomotives are equipped with the Vaughan trailing truck, the extension frames being outside the trailing

sary for locomotives operating in cold climates, and a great deal of attention was given to the design of this ash pan. As far as possible, all corner angles are located outside the pan and straight joints in the plate are formed by flanging the plate to the outside, the joint being made with sheet asbestos. This construction removes a great many bolt heads from the inside of the pan. The ash pan doors are of the swinging type and are supported from pivot points located back of the center of gravity of the door, so that the doors are self-closing by their own weight. This is particularly advantageous from a standpoint of fire risk.

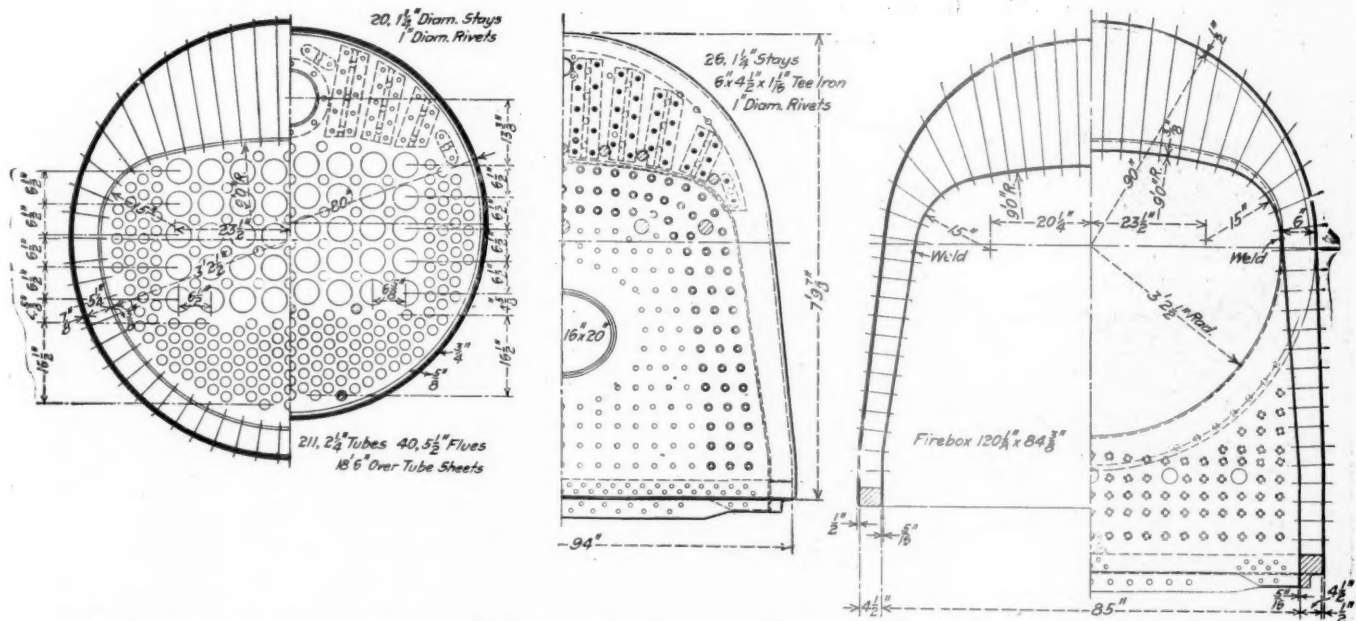


Extended Wagon Bottom Type Boiler for Canadian Pacific Mikado Type Locomotive

wheels and spaced 6 ft. 3½ in. center to center. No radius bar is used with these trucks, the guiding motion being obtained from inclined vertical faces on the journal boxes which bear against faces having the same incline on the pedestals attached to the extension frame. This type of

The ash pan is supported by a combination cast steel bracket, which also forms a support for the grate side carriers.

The grates are of the butt finger type, 10 in. wide, are in four sections, and all are moving grates. Dead grates at the front and back have been eliminated. The center



Half-Sections at Front Firebox Sheet, Front Tube Sheet, Backhead, and Through Firebox at Front and Back

truck has been used on Canadian Pacific locomotives for the past 13 years and has given satisfactory service.

Ash Pan and Grates

The chief advantages of this construction of rear frame are simplicity and the providing of an ash pan of ample capacity with very few relatively flat horizontal surfaces; this latter is indicated by ash pan drawing. An ash pan of ample capacity and with quick slopes is absolutely neces-

carrier is of very light cast steel construction and is reinforced along the bottom or tension member by a structural tee iron, shrunk in place and riveted. Careful attention was given to the design of the grate side carriers to eliminate warping. The design finally adopted has the side carriers in two sections. This permits a stiffer construction and also facilitates any repairs to firebox corners, as only one section of the grates need be removed.

The main and side rods are of ordinary carbon steel and

present no unusual features, except that the front and back side rods have been made interchangeable; that is, the back right and front left side rods are identical. The piston heads are of cast iron and are considerably lighter than heads two inches smaller in diameter which have been used as standard on other Canadian Pacific locomotives. This is the result of a very close analysis, both mathematically and by actual tests, of the stresses in piston heads. The crosshead is a modification of that previously used as standard by the Canadian Pacific. The body of the crosshead is cast in one piece and takes removable cast iron wearing pads, which are in three sections, top and bottom, and are retained in place by side plates which are bolted to the crosshead body.

Rods and Motion Work

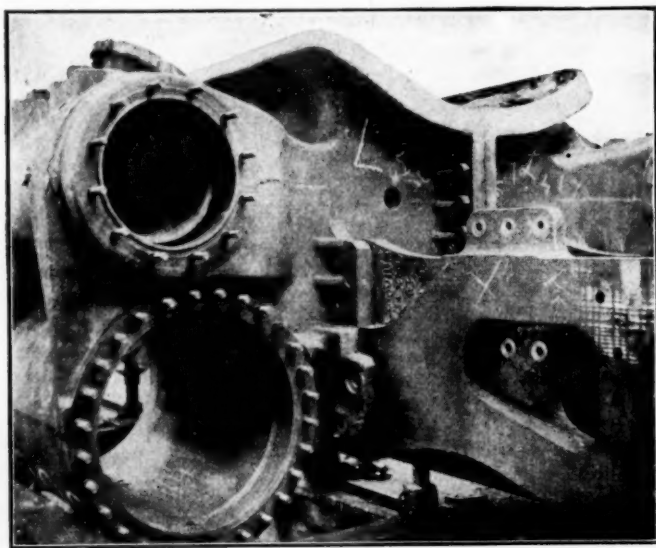
The union link connection to the crosshead is slightly unusual. It is apparently carried by the wrist pin, but actually works on a bearing which is part of the inside washer. This washer fits on a tapered shoulder on the crosshead body, so that the wrist pin is relieved of any thrust from the union link.

Although all motion parts are of ordinary carbon steel, particular attention has been given, in their design, to the reduction of weight with the result that the reciprocating parts are only 96 lb. heavier than those used on the lighter Mikado type engine, which is an increase in weight of 5.87 per cent, as against an increase in piston load of 31 per cent.

Sand Box and Cab Fittings

An oval sand box is used which has a capacity of 20 cu. ft. This is of built-up construction, the bottom being flanged in two parts and joined at the center by a riveted butt joint. The top is flanged in one piece. This gives an extremely light construction for the large carrying capacity, the total weight of the sand box empty being 975 lb.

Every effort was made to obtain the most efficient layout

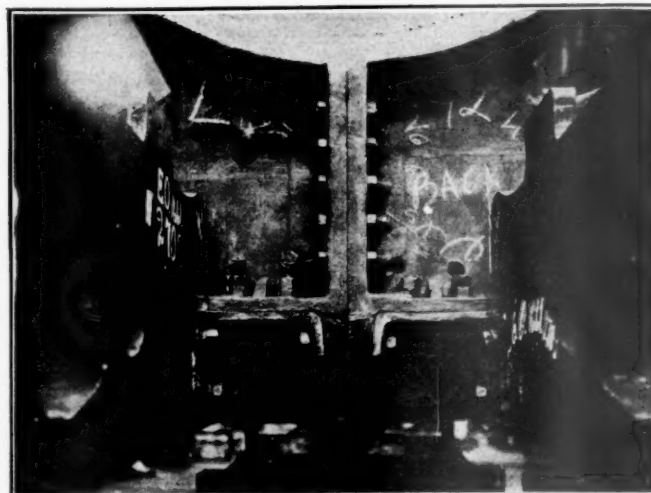


Extra Lug Attaching Cylinder Casting to the Frame

on the back head of the boiler so that all valves, the throttle lever, lubricator, air brake equipment, etc., would all be properly located, and at the same time permit both the engineman and fireman to have an unobstructed view of the water glass and steam gage.

The width of the firebox prevented locating the brakeman's seat in the usual position ahead of the fireman's seat and between the firebox and the cab side. The cab is of the Canadian Pacific standard vestibule type, and it was finally decided to locate the brakeman's seat directly be-

hind the fireman's. The vestibule cab usually includes two lockers, one on either side of the cab, back of the doors. To make room for the brakeman's seat, the locker on the left hand side was omitted and the height of the locker on the right side increased to six feet. A fold-up brakeman's seat was then located on the left side in such a way that with the seat dropped in place and the door closed, a drop panel in the door forms a window to enable the brakeman to look out. This window is provided with a small arm rest of the usual construction, which folds inward when the door panel is raised. The locker on the right side of the cab is divided into two parts, the 4-ft. upper locker being lined with wood and furnished with coat hangers to take



Cast Wedge Reinforcement to Frame and Cylinder Casting

the crew's clothes. The bottom locker is used for supplies, signal equipment being carried in a wire rack located under the cab roof.

The Tender

The tender is of the water bottom construction with a total capacity of 8,000 Imperial gallons, which is equivalent to 9,600 American gallons, and has a coal capacity of 12 tons. The slope of the back coal sheet is 45 deg., which is sufficient to insure that all the coal is fed to the front of the coal space, and dispenses with the use of a coal pusher. This is Canadian Pacific standard construction, all locomotive tenders being fitted in this way. The tank bottom is in two pieces, having one longitudinal butt joint with inside and outside welts. The swash plate bracing has been very carefully worked out in order to eliminate all unnecessary strains on the riveting and to insure freedom from trouble from leaky tenders. The tank is supported by a Commonwealth one-piece cast steel underframe. The tender trucks are of the equalizer type with combination semi-elliptic and coil springs.

Special Equipment and Air Brake

These locomotives are equipped with Security brick arches, Cole extension main driving boxes, Franklin automatic driving box wedges, Franklin radial buffers, Franklin unit safety bar (of standard C.P.R. laminated design), Franklin vertical type steam grate shakers, Franklin No. 8 automatic fire doors, Economy engine truck, Nathan type "T" top checks, World safety valves, Detroit lubricators, Hancock non-lifting type "H.N.L." inspirators on the left side, and Hancock type "A" lifting inspirators on the right side, Ragonnet reverse gear, Never-Clog air sanders and Pyle-National turbo-generators with incandescent headlights.

The air brake is the Westinghouse schedule "ET" with cross-compound air compressors. Ample cooling surface

is provided in the air brake piping, 2-in. pipes being used between the compressor and the first reservoir. A parasite reservoir is also part of the air system with the pressure controlled by a Westinghouse parasite governor.

The locomotives are hand-fired and have proved exceptionally easy steamers, and quite live up to the expectations of economy in coal and water.

The principal data and dimensions are as follows:

General Data	
Gage	4 ft. 8½ in.
Service	Freight
Fuel	Bit. coal
Tractive effort	56,147 lb.
Weight in working order	320,500 lb.
Weight on drivers	235,000 lb.
Weight on leading truck	28,000 lb.
Weight on trailing truck	57,500 lb.
Weight of engine and tender in working order	498,600 lb.
Wheel base, driving	16 ft. 6 in.
Wheel base, total	35 ft. 8 in.
Wheel base, engine and tender	68 ft.
Pistons	
Weight on drivers ÷ tractive effort	4.18
Total weight ÷ tractive effort	5.7
Tractive effort × diam. drivers ÷ equivalent heating surface*	717
Equivalent heating surface* ÷ grate area	70.1
Firebox heating surface ÷ equivalent heating surface, per cent.	9.47
Total weight ÷ equivalent heating surface*	65.0
Volume both cylinders	18.9 cu. ft.
Equivalent heating surface* ÷ vol. cylinders	261.0
Grate area ÷ vol. cylinders	3.72
Cylinders	
Kind	Simple
Diameter and stroke	25 in. by 32 in.
Valves	
Kind	Piston
Diameter	14 in.
Greatest travel	6½ in.
Outside lap	1½ in.
Inside clearance	¾ in.
Lead in full gear	3/16 in.
Wheels	
Driving, diameter over tires	63 in.
Driving, thickness of tires	3½ in.
Driving journals, main, diameter and length	11½ in. by 21 in.
Driving journals, others, diameter and length	10½ in. by 14 in.
Engine truck wheels, diameter	31 in.
Engine truck, journals	6 in. by 12 in.
Trailing truck wheels, diameter	45 in.
Trailing truck, journals	9 in. by 14 in.
Boiler	
Style	Extended wagon bottom
Working pressure	200 lb. per sq. in.
Outside diameter of first ring	80 in.
Firebox, length and width	120½ in. by 84½ in.
Firebox plates, thickness. Tube ½ in., crown and back ¾ in., sides 5/16 in.	
Firebox, water space	Front 5 in., back and sides 4½ in.
Tubes, number and outside diameter	211, 2¼ in.
Flues, number and outside diameter	40, 5½ in.
Tubes and flues, length	18 ft. 6 in.
Heating surface, tubes and flues	3,347.78 sq. ft.
Heating surface, firebox, including arch tubes	517 sq. ft.
Heating surface, total	3,664.78 sq. ft.
Superheater, heating surface	845 sq. ft.
Equivalent heating surface*	4,932.28 sq. ft.
Tender	
Tank	Water bottom
Frame	Cast steel
Grate area	70.3 sq. ft.
Weight	178,100 lbs.
Wheels, diameter	36 in.
Journals, diameter and length	6 in. by 11 in.
Water capacity	8,000 imp. gal.
Coal capacity	12 tons

*Equivalent heating surface = total evaporative heating surface + 1.5 times the superheating surface.



Photo from International

A Czecho-Slovak Guard and Their Headquarters on the Trans-Siberian

The Relation of Valuation to Investment*

By Thomas W. Hulme

Vice-Chairman, President's Conference Committee at Valuation

THE PRESENT INVESTMENT is not necessarily what was originally put into the property. The corporate ownership may have changed hands upon a different basis; some portion of the physical property may have increased in value and some may have decreased in value. The Supreme Court of the United States has said that it is the property and not the original cost of it that is protected by the Constitution, and of which property the owner may not be deprived without due process of law. Therefore, as it is the property that is the investment, it means the investment is measured by the present value.

The determination of the value of property, i. e., of privately owned property, not in public use is ordinarily measured by what it would bring in exchange, usually determined by its earnings past, present, and prospective. But that cannot be the same thing when you come to deal with private property that is subject to public use, because there regulation enters immediately and, to a certain extent, determines the result. Now regulation cannot go to the extent of destroying the value of the property, nor can the owners of the property make such unreasonably high charges as to increase the value thereof. The problem, therefore, is how this situation is to be met. Where rates themselves are in question, the value cannot be determined by the capitalization of the net.

This problem, in the 25 years that it has been under consideration, has many times been before commissions and courts. Almost always they have dodged the real determination. They have approached it from the standpoint of what seemed to them fair, but as the Constitution stands in the way of taking any portion of the property, without due process of law, they have called their conclusions, value. These conclusions, reached by many different commissions, without the determination of correct principles by the courts, because they have not been definite or have not been reached with courage, have left the matter in an uncertain condition until, perhaps, the present time when it seems to be clarified.

The court has said that the value of such property should be determined by the exercise of a reasonable judgment in the consideration of all the pertinent facts, including the actual investment if known, the present cost of production of the property, its condition, its earnings, both at the present time and under contemplated rates, and all other pertinent facts.

When these decisions have been made, it has not usually been known to which of these factors the commission has given the greatest weight, but it has been quite clearly shown that, while in the few condemnation cases, that is, the taking of the ownership of a public utility, it was not only the physical property that had to be paid for, but it was also the value of the business, the enjoyment of the business, that had to be paid for. Nevertheless, there has been generally a tendency to deny in a rate proceeding that the business had to be taken into consideration, but, in a decision by the Supreme Court of the United States in June of this year (the Denver Water Company case), it seems to be clearly decided that, even in a rate proceeding, consideration must be given not only to the bare bones of the property, but also to the business of the utility. That seems to be in accordance with common sense, because I think it is generally recognized that a property is worth very much more after it has developed

*Abstract of address made before the Academy of Political Science, New York City, November 21, 1919.

a business than it would be immediately after its completion.

We, therefore, have, as I understand it, in the valuation of property privately owned but used for a public purpose, two major elements for consideration. First, the valuation of the physical property, next the valuation of the business, ordinarily referred to as "going concern" value; in the case of a private business not subject to Governmental regulation, it is commonly referred to as "good-will," although the term "going concern" embraces very much more than good-will. A local monopoly, such as water, gas or electric property, perhaps, cannot be said to have good-will, but a railroad where the business has been built up under competitive conditions as most of these railroads have been, enjoys good-will, so that in some cases the good-will would be present; in other cases it would not.

Our first consideration, therefore, is the determination of the value of the physical property. Unquestionably the courts have held, in many cases, that the cost of reproduction properly applied is the measure of the value of the physical property. In the case of any normal property, i. e., one whose existence is justified, it certainly must be held that it is worth its cost of reproduction under a proper method. It is conceded that there may be cases of railroads and other utilities that have been constructed where they are not needed, and I except that class of property to my contention. But great care must be taken in such a classification of any property lest injustice be done.

Now, I am not saying that the cost of reproduction must necessarily be at present-day prices, but I am saying it must be upon reasonable conditions that would be generally acceded to as being reflective of a general situation; if, however, any governmental authority should attempt at this time, when we have probably reached a permanent level of higher prices, to take the property of such a company, there is no doubt in my mind but that in a condemnation proceeding the court would hold that the trend of prices has been so unmistakably to a higher level that the present-day prices would apply.

Therefore, I say to investors that the weight of the decisions of our courts are so unmistakably in the direction of a protection to them in a valuation proceeding that they should not be misled by proceedings in the past which have been made solely from the standpoint of what somebody thought was "fair" to determine in a rate case.

What has been the effect of such valuations, such "fair" valuations? The unmistakable result has been to reduce the net earnings, to impair the credit until we have reached the present stage. Now, if the credit is to be restored, it must be through an authority to increase the charges to a point where they will not only yield a return on the present investment, but also yield a return on the amount of money that it is necessary to provide for extensions and additions and betterments.

So frequently governmental bodies overlook that point in establishing their rate basis. They try to fix it on what has been sufficient for the past, overlooking the fact that provision must also be made for the new capital that is going into the property. If we have in the case of a justified property that the valuation of its physical property should be its cost of reproduction, provided that property has been properly maintained for the purpose for which it has been used, we then have to consider what effect in reaching the total or true value of that property must be given to its earning power. Earning power means potential, future developments and not merely the present basis of earnings.

There are so many properties that are unquestionably worth more than their mere physical value that it seems to me it must be accepted that where, over a considerable period of years, those properties have yielded a return upon the investment that is more than the usual interest rate, it

must be recognized that those properties, through the skill of their management or through the good fortune of their location or through all other causes and where the volume of their business has been developed, so that they have an earning capacity greater than the ordinary, they must be accorded to a value greater than their physical. In such cases, where the rates, under which their earnings are obtained, are not in question, the value of the properties would be what you are accustomed to think them to be, the economic value.

Without any attempt to make a contention that there must be a minimum value, it must also be apparent that any road that is doing a great volume of business, even though in the past under regulation which has really been in an embryonic state—regulators have to learn just as great business organizations have to be developed—that, when this investigation is completed by the Interstate Commerce Commission, they will have at hand the information that will, I think, give the answer to what is called the present railroad problem.

This work of the Commission is probably the greatest economic task ever undertaken. It has been under way now for a little more than six years. It has cost over sixty millions of dollars. The mere inventory work will, according to the director in charge, be completed by the end of the year 1921.

The commission has refrained from attempting to determine the principles of valuation of this class of property until its work can be further advanced and until the Commission shall have before it some of the representative types of property. It has scheduled a hearing in January next for argument upon the subject. At that time, there will be presented to it the views that I have just expressed to you and which, if they should be successful before the Commission, will, I am sure, be a full measure of protection to your investments.

Material Inventory to Be Taken as of February 29

DIRECTOR GENRAL HINES has issued General Order No. 62-A directing that the material inventory required by General Order 62 shall be taken as of February 29, 1920, instead of during the months of October, November or December, 1919. Roads which have already taken an inventory in October, November or December, 1919, under General Order 62 will be permitted to adjust such inventory by addition of receipts and deduction of issues of material to February 29, 1920, when in the judgment of the federal manager accurate results may thus be obtained.

Accounting Circular No. 122, issued by the Division of Accounting says that the purpose of the inventory is to obtain an accurate list of every item of material in the possession of carriers under federal control which is not in actual use. A good many questions have been raised concerning this procedure on the ground that certain items were not included in the inventory as of December 31, 1917, and should therefore be omitted from the one as of December 31, 1919. Stocks of material are constantly changing, and it is impossible to determine definitely whether any certain material which may happen to be on hand at this time was not included in an inventory taken two years ago. It is necessary that the present inventory should include every item of material and supplies not in actual use, but in cases where articles have been temporarily removed from a locomotive or a car which is undergoing repair with the intention of replacing them in their previous locations, they should be listed in the inventory with sufficient detailed description so that they can be fully identified as a part temporarily removed from a unit of equipment during the repairs or rebuilding of such unit.

Direct Current Transmission for Electrification

Proposed System Would Deliver 3,000 Volt D. C. Power from Conductor Rails to Multiple Unit Trains

By Alfred Raworth

Electrical Engineer, South Eastern & Chatham, England

IT IS, POSSIBLY useful to consider at the present time, when railway electrification on a large scale appears to be imminent, the engineering methods that will be adopted, and particularly those which will be used in transmitting electrical energy between the substations and the trains.

The problem consists in delivering, over considerable distances, large blocks of power to trains in motion, and the difficulty of solution arises from the fact that, while a comparatively high pressure is necessary for the attainment of economical transmission, a comparatively low pressure is desirable for satisfactory operation of railway motors and their control apparatus.

Early examples of railway electrification embodied the use of direct current at 600 volts, a pressure admirable for the operation of electric train equipments but much too low for economical transmission, and involving a very close spacing of substations in order to keep the drop of pressure within reasonable limits.

Recognition of this fact has led to the pressure being increased up to 1,500 volts for use on motor car trains, but, while this pressure has been proved to be eminently suitable for the satisfactory operation of electric train equipments and not so high as to prohibit the use of conductor rails, it is

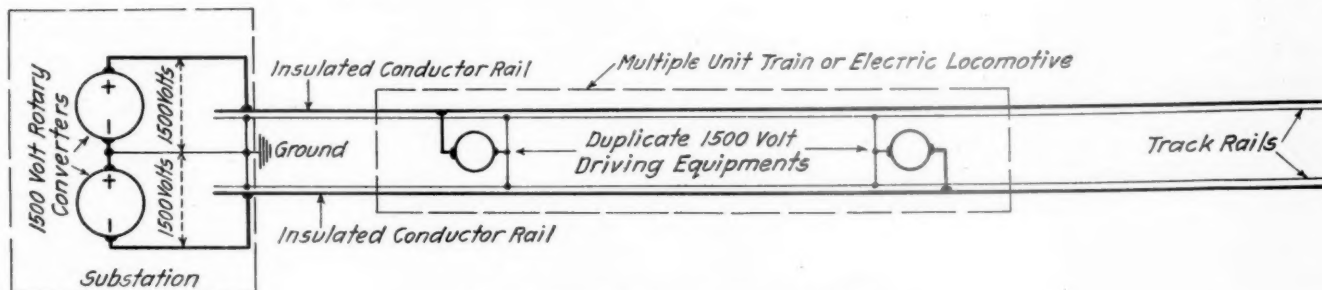
wire for supplying current at high voltage to electric locomotives working long distance trains.

It must surely, however, be admitted that such an arrangement, resulting in increased cost of construction and reduced load factor on track conductors and substation apparatus would be, at best, only a makeshift, and inferior in every respect to a single system capable of handling, with equal efficiency and convenience, both classes of traffic.

Inseparably bound up with the problem of transmission between the substations and the trains, is the question of the measures to be taken to guard against the possibility of damage to other persons' property which may result from current leaking from grounded return conductors.

In certain cases, the tramway practice of using the running rails as a grounded return conductor has been followed, and in places where the drop of pressure in such grounded returns is more or less immaterial, this method may be justifiable; but, in thickly populated areas, such as those through which most British railways run and in which gas and water pipes, electric cables, apparatus and circuits liable to damage from stray currents abound, it is most certainly dangerous.

Some of the railways in England that have carried out



Circuit Diagram for Proposed System

still too low for the attainment of economical transmission in the case of long distance main lines carrying heavy traffic.

In order to overcome the disadvantages and expense of transmission at such low pressures, and to endeavor to render the direct current motor available for application to long distance main line railways, the pressure has been raised to 3,000 volts in the case of one railway now in operation in America and utilizing electric locomotives.

While it may be possible that the greater clearances and complications in control apparatus inseparable from the use of this pressure may be tolerated in an electric locomotive, it is quite certain that a pressure of 3,000 volts is too high for use on motor car trains.

Realization of these considerations is doubtless responsible for the recent suggestions of F. W. Carter* and Roger T. Smith† that it may be necessary, in connection with the electrification of our main line railways to instal two separate track conductor circuits, a low voltage conductor rail for the operation of suburban motor car trains, and an overhead

electrification schemes have proceeded under Section 86 of the Railway Clauses Consolidation Act, 1845, which provides that it shall be lawful to use and employ locomotive engines or other moving power, while other companies, usually owing to the necessity of raising additional capital or of compulsorily acquiring land, have obtained special parliamentary powers.

Railway companies which have proceeded under the Railway Clauses Consolidation Act, 1845, are under no obligation to observe any regulations regarding the use of grounded return conductors, but they are, of course, liable to be proceeded against as a result of any damage which they may cause by the use of such grounded returns.

On the other hand, railways who have applied for special powers have, in some cases, been compelled to comply with the Board of Trade Regulation applicable to tramways, which limits to seven volts the permissible drop in grounded returns, and there has always been inserted in their Acts the following provision:

"When any department of His Majesty's Government represents to the Board of Trade that the use of electrical

*Electric Review, July 18, 1919, p. 69.

†Presidential address to Institution of Electrical Engineers, November, 1919.

power under this Act injuriously affects or is likely to injuriously affect any instruments or apparatus, whether electrical or not, used in any observatory or laboratory belonging to or under the control of that department, the Board of Trade, after such inspection or inquiry as they may think proper, may by their regulations require the company to use such reasonable and proper precautions, including insulated returns, as the Board of Trade may deem necessary for the prevention of such injurious affection."

The clause quoted, usually referred to as the "Observatory Clause," places upon the railway the obligation of avoiding any chance of interference with scientific instruments installed in observatories and laboratories with the ever present possibility that, in the event of such damage occurring, the railway may be required to instal insulated returns.

It will be observed, therefore, that, in any case, it is necessary for a railway company, if they use the running rails as a grounded return, to provide that the drop in pressure shall be kept down to a very low value.

The difficulty of so doing will be appreciated when it is stated that the resistance of a pair of running rails is approximately .03 ohms per mile, and the current required at starting by an electric locomotive of a type suitable for working express passenger trains, or by a nine-coach train suitable for suburban services on main line railways, is about 3,600 amperes at 600 volts.

If we assume the condition in which two such trains are starting, opposite one another, one on each line of a railway with two lines of way, and midway between adjacent substations, so that half of the current required by each train is supplied by each substation, the drop in volts in a grounded running rail return would be, per mile length of section between substations:

At 600 volts.....	27
1,200 volts.....	13.5
2,400 volts.....	6.75
3,000 volts.....	5.4

If it is decided to limit to, say, 27 volts, the drop in the grounded return, we find that the maximum distances between substations, for the conditions assumed will be:

At 600 volts.....	1 mile
1,200 volts.....	2 miles
2,400 volts.....	4 miles
3,000 volts.....	5 miles

These distances may be increased in proportion to any increase in the negative drop which it is decided to allow, but it is important to remember that the condition of two trains starting in the middle of a section corresponds to the heaviest condition likely to arise, only in the case of very short sections. On a section of greater length, on lines over which a frequent service is operated, it will be possible that more trains may be in the section at one time, drawing a larger total current and necessitating a reduction in the distance between substations.

It will be obvious that this very close spacing of substations will produce a very bad substation load factor, resulting in high first cost and operating expenses, and will make such an arrangement, even with a pressure as high as 3,000 volts uneconomical for the equipment of long distance lines which are required to handle heavy traffic.

Some railways have endeavored to reduce the pressure drop in grounded returns by laying additional rails or feeders connected in parallel with the running rails, but this method, while failing to give the same security as an insulated return, may be, as in some cases in America in which a multiplicity of negative feeders are employed, even more expensive.

The installation of an insulated return conductor carries with it great advantages, in that it enables the permissible drop in the transmission system between the substations and

the trains to be determined economically, and gives complete security against the dangers incidental to a grounded return; on the other hand, as usually installed, it possesses certain disadvantages in connection with the maintenance of insulation and the location and clearance of faults to ground.

How the Difficulties May Be Overcome

Having enumerated the difficulties of the problem of transmission between the substations and the trains in connection with long distance lines which are required to handle the heaviest traffic, it is proposed to suggest a method by which they may be overcome, that is to say, by which:

1. Direct current may be economically and efficiently produced in the substations and delivered to the trains at a voltage low enough to enable multiple unit equipments to be operated safely and satisfactorily.
2. Direct current may be transmitted at a potential from ground low enough to permit of the use of a conductor rail.
3. The voltage of transmission may be high enough to secure the maximum economy.
4. All danger of causing damage to other persons' property by electrolysis or leakage currents may be avoided.
5. The difficulties in connection with the use of an insulated return, as usually installed, may be eliminated.

The arrangement proposed is shown in the diagram and embodies the installation along each track of two insulated and protected conductor rails, connected as the outers of a 3-wire system, of which the running rails, bonded and cross bonded, would form a grounded neutral conductor.

Each conductor rail is at a potential of 1,500 volts, the one above, the other below the ground.

Each motor car train unit and each locomotive, in accordance with usual modern practice, carries two duplicate equipments, designed to operate at 1,500 volts, and the arrangement is such that each side of the system supplies the current for half of every train.

By these means, the system is quite perfectly balanced, and the running rails forming the neutral conductor will not normally carry current.

The only occasion upon which any current will be carried by the running rails will be when the collector shoe of a train is crossing a gap in a conductor rail, necessitated by special work in the permanent way, but in such a case, the current will only be that required by one 2-motor equipment, and it will flow only momentarily.

The arrangement, while securing the advantages of transmission at 3,000 volts through conductor rails of large sectional area, does not require any direct current machine, switchgear, train equipment, conductor rail, or other apparatus to work at more than 1,500 volts from ground.

Upon lines carrying the heaviest class of traffic, substations may be economically placed some thirty miles apart; they will, consequently, supply a large number of trains and will have the advantage of a good load factor.

The necessary conversion plant, instead of being distributed in small units in a large number of substations, each of which would of necessity contain a spare machine, will be concentrated in large units in fewer substations, thus reducing both the capital cost of the plant required and the substation operating expenses.

Estimates which have been prepared in connection with both suburban and main line electrification show that, when compared with other arrangements, the methods now proposed will result in lower first cost and lower operating expenses.

Valuation Arguments Heard by I. C. C.

Briefs Were Presented Upon the Question of the Final Value Which the Commission Should Find

ORAL ARGUMENTS were presented before the Interstate Commerce Commission on January 7 upon the question of the final value which the commission should find and report in the proceedings involved in valuation dockets Nos. 1, 2, 4, 5 and 6 for the properties under valuation and as to the elements to be considered and the weight to be attributed thereto in finding such final value in any case. Briefs on the question of final value had previously been filed by W. G. Brantley, Sanford Robinson and Leslie Craven, of counsel for the President's Conference Committee; P. J. Farrell, chief counsel of the Interstate Commerce Commission; C. E. Elmquist and J. E. Benton for the valuation committee of the National Association of Railway and Utilities Commissioners; by the Public Utilities Commission of Illinois, and by W. G. Brantley for the Atlanta, Birmingham & Atlantic and Winston-Salem Southbound railroads.

The brief on behalf of the President's Conference Committee is a voluminous one, taking up the principal points involved in the valuation proceedings and taking the position that the commission, in order to comply with the valuation act, is required to determine the value of each railroad as a railroad for the transaction of a railroad business, which includes consideration of earning power.

Mr. Farrell took the position in his brief that at present rate-making is the only purpose under the act to regulate commerce for which the commission can use a final value of common carrier property, but if in the future it becomes necessary to fix the final value of such property for some other purpose any necessary modification of the value for rate-making purposes can readily be made.

The brief on behalf of the state commissions urged that the commission should not find and report a final value on the ground that the valuation, which under the act is to be prima facie evidence of value, is something quite different from a single sum expressed in dollars and cents. The term "valuation," according to this argument, refers to the entire collection of data contained in the valuation report of the commission, and it is asserted that the commission's jurisdiction to find the ultimate value of a property arises only from its rate-making powers and not from the valuation amendment. The argument adhered to the position taken all along by the state commissioner's committee that the commission should not attempt to find and report the final value of the property of any carrier in these proceedings because the value for rate-making purposes may differ from the value for other purposes. A summary statement is presented of the main facts to be considered in finding the value in the instant cases.

The brief of the Illinois commission also took the position that the commission should not find a final or ultimate value of the railroad property as a unit, on the ground that the value is not the same for all purposes and that the final value for rate-making purposes must be determined as a matter of judgment and not as a matter of mathematical decision, and should be, first, fair to the public, and, second, fair to the carrier.

For the Atlanta, Birmingham & Atlantic and the Winston-Salem Southbound, Mr. Brantley adopted the rules, principles and arguments contained in the brief of the President's Conference Committee, but added a brief discussion of the particular points pertaining to those roads.

An extract from the brief of the President's Conference

Committee on the determination of final value is as follows:

"The attention of the commission is invited to the language of Commissioner Prouty in *Advances in Rates, Eastern Case*, 20 I. C. C. 243, decided February 22, 1911, where he said:

We are not fixing the value of a collection of ties and rock and steel rails, but of a railroad equipped and doing business. What is that railroad worth as a railroad for the transaction of a railroad business?

"The answer to this question, it may be said, is called for by the valuation act.

"The methods of the commission, so far as disclosed, only provide for the determination of 'the value of a collection of ties and rock and steel rails' and other physical properties of a railroad. The commission must go further, in order to comply with the valuation act, and determine the value of each railroad 'as a railroad for the transaction of a railroad business.'

"It being demonstrated that the total value of a railroad property is determined by a proper consideration of its structural value and its 'other values and elements of value,' which latter we have suggested can best be determined by first appraising the earning power of the property under reasonable rates, it only remains to offer briefly some suggestions as to the consideration which should be given to each of the two elements of value named.

"The commission in its order has directed that its attention be called to the elements which should be considered in determining final value and to the weight to be attributed thereto, and in response the carriers suggest that the two basic elements to be considered are structural value and earning power value as herein defined.

"There can be no presumption in the first instance that a railroad has been unwisely built, or built in a locality where there is not sufficient business to sustain it. In other words, there can be no presumption in the first instance that the existence of the railroad being valued is not justified. On the other hand, the presumption in the first instance, based upon the economic facts of a railroad property and the decisions of the courts should be that the railroad under valuation is a normal railroad and therefore has a total value at least equal to its structural value. This presumption, which is also in accord with the principle that 'justice demands that everyone should receive some compensation for the use of his money or property, if it be possible without prejudice to the rights of others' (*Reagan vs. Farmers' Loan & Trust Co.*, 154 U. S. 412), makes structural value of basic importance. It is, therefore, suggested that structural value is the first element to be given consideration in the determination of 'value for purposes under the act to regulate commerce.'

"Having determined upon the structural value of the property, in accordance with the rules herein suggested, the value of the earning power of the railroad should then be appraised.

"Earning power, as the cases herein cited show, measures the productiveness of the property. It is the measure of what is generally known as economic value. In the determination of the amount of this element of value there should be considered, among other things as hereinbefore pointed out, the capitalized amount of the net earnings, based upon a consideration of present and prospective earnings on the basis of existing rates. If the rates are in question, the

capitalization should be made also on the basis of assumed reasonable rates. The traffic of the carrier, and whether growing or decreasing in volume, the gross and net earnings of the property under existing rates, and the operating expenses of the property should all be analyzed, classified and considered. In the determination of whether or not the existing volume of business may be considered as permanent or as likely to increase, there should be considered the favorable location of the railroad with respect to command of traffic, the existence of traffic-producing industries along the line of the railroad, the wealth, population and resources of the territory traversed by it and whether increasing or diminishing, and the potential traffic, both present and future, which is accessible to the railroad.

"There should also be considered the advantages of connections with other carriers which the railroad may enjoy, the existence of favorable contracts for the use of property not owned by it, the existence of favorable contracts for the obtaining of fuel and supplies of other kinds, the favorable location and construction of the railroad from the standpoint of economy of operation, the character of the maintenance of the railroad, the franchise of the railroad, the good will of its patrons, the original and reproduction cost of establishing the business of the railroad and other elements.

"All these matters clearly come within the rule of the Supreme Court laid down in the *Minnesota Rate Cases*, *supra*, of 'relevant facts,' upon which there must be a 'reasonable judgment' in the determination of value.

"Value was said by the Supreme Court in the *Consolidated Gas Case*, 212 U. S. 42, to be 'to a considerable extent matter of opinion.' Manifestly, however, it must be an opinion, as the court later said, based upon 'a reasonable judgment having its basis in a proper consideration of all relevant facts.' 230 U. S. 352.

"Having determined the structural value of the railroad, and as well the value of its earning power, as herein suggested, the next step in the process of valuation is to determine from a consideration of these two elements of value the total value which shall be assigned to the property as a whole. It will be recalled that the Supreme Court in *Smyth vs. Ames*, *supra*, did not limit the determination of the total value to a consideration alone of structural value and earning power value, but added that 'We do not say that there may not be other matters to be regarded in estimating the value of the property.' These 'other matters' are clearly included in the valuation act in the broad phrase 'other values and elements of value.' The Supreme Court has said that 'Each case must rest upon its special facts' and that the ascertainment of value 'is not controlled by artificial rules,' nor is it 'a matter of formulas.' There must in each case be the exercise of a 'reasonable judgment' which shall be based upon a proper consideration of all the 'relevant facts' in that particular case, and if there be other elements than structural value and earning power value affecting the total value of a particular railroad, they too must be considered.

"If in a particular case the value of the earning power, determined as herein suggested, clearly exceeds the amount of the structural value, and if the reasonableness of the rates by which it has been determined is not fairly open to question, and if the railroad is well established and has had for a substantial period a continuous record of favorable earnings with every reasonable prospect that such record will continue, it is suggested that this value of the earning power should be accepted as the total value of the property. If the amount of it is determined in the way herein suggested, it will have been determined in accordance with both legal and economic principles.

"Such a railroad clearly possesses a total value in excess

of its structural value, and the amount of the excess is rationally and logically determined by taking the value of the earning power as the total value, and it follows that the difference between the earning power value and the structural value will accurately measure the amount of the 'other values and elements of value.' It will, of course, be observed that in the determination of the value of the earning power capitalized net earnings will not have been taken as the measure, but will simply have been one of many elements considered in the determination of such value.

"It has heretofore been suggested that no contention is made that in any case capitalized net earnings are the sole measure of the value of a railroad. No such contention is made even where the net earnings are large.

"In connection with a consideration of net earnings, the economic fact that a potential power to earn may exist which is not disclosed by a consideration merely of the actual net earnings is to be kept in mind, and it is believed and suggested that a demonstrated capacity to earn under proper management and reasonable rates is, as a rule, a better guide to value than actual earnings.

"If the railroad under valuation is a normal one and actually has an established business and is earning money, we start with the presumption required by the authorities—that its total value is something in excess of its structural value. The problem is to determine the amount of the excess. That the total value of such a railroad must be in excess of its structural value is made manifest upon even a slight consideration of the many cases herein cited respecting 'going concern' value. It may possess such a potential power to earn, which for one cause or another has not been fully developed, as to give it a total value substantially in excess of this amount, unless the allowance for 'going concern' value be liberally and generously determined. The total value in such case must of necessity be determined by the exercise of a 'reasonable judgment' based upon a consideration of all the 'relevant facts' of the particular railroad.

"If the railroad clearly appears not to be a normal one, and is demonstrated to be one whose existence is not justified under the rule suggested in *Reagan vs. Farmers' Loan & Trust Co.*, *supra*, and *Darnell vs. Edwards*, *supra*, the important element in the determination of its value is, as in the case of the normal railroad, its structural value, but the problem is, not how much more but how much less than such structural value is its total value. This determination calls for the exercise of a 'reasonable judgment,' based upon a careful consideration of all the facts affecting the present and possible future value of the railroad and affecting the character of the public service being rendered and probably to be rendered by it. The greatest care should be here exercised, to avoid any possibility of doing a gross injustice to the investors, who in good faith acquired the property and devoted it to the service of the public.

"The carriers are of opinion that the 'reasonable judgment' required in all cases to be exercised can best be given by those who, by reason of their special training and experience and by reason of their knowledge of the particular property and its surroundings, are best qualified to give a 'judgment' or opinion as to its value.

"The carriers respectfully urge that, in the case of each railroad property, the full and complete opportunity should be given to the owners thereof, in advance of any determination of value by the commission, to obtain and submit to the commission the opinion or judgment of one or more qualified appraisers as to the total value of the property. The carriers further suggest in this connection that the commission will hardly be in position to reasonably or properly determine the 'value for purposes under the act to regulate commerce' of any railroad property until such expert opin-

ions have been obtained and submitted, and the commission has had an opportunity to carefully consider them.

"In addition to what has been said the carriers suggest that the commission may derive some assistance in the determination of value by a consideration of the methods approved in various cases by the courts and others for arriving at the amount of the intangible values in railroad property which are subject to taxation. In all these cases the fact of the existence of intangible values is recognized, and the cases are devoted in the main to a consideration of methods for determining the amount of such in tangible values. These cases recognize the existence of the structural value, and all of them are in the main devoted to a consideration of the amount of value above structural value existing in a railroad property. Attention is here called to a few of these cases.

"The carriers would take the liberty of suggesting in conclusion that the situation confronting the commission in complying with the mandate of Congress, as expressed in the valuation act, is not one in which the commission can say, as the courts have frequently said in confiscation cases, that 'clear and convincing proof' of the amount of intangible values has not been submitted by the carriers, and therefore no report of same will be made.

"The commission is engaged in making a report to Congress of 'the value of all the property owned or used by every common carrier' subject to the provisions of the act to regulate commerce. Congress has directed how it wishes the report to be made, to wit: a separate report of the tangible and intangible properties of each railroad, and the commission is in duty bound to make such report in the case of each railroad. The burden, and as well the responsibility of making this report rests upon the commission and not upon the carriers. The connection of the carriers with the making of the report is merely to co-operate with and to aid the commission to such extent as the commission may require, and this brief is submitted in the spirit of co-operation suggested and directed in the valuation act."

Mr. Farrell's Brief

Mr. Farrell in his brief said that, generally speaking, when one uses the term "value" he has in mind the desirability or worth of a thing as compared with the desirability of money; in other words, the worth of a thing in dollars and cents, but while this definition is appropriate as applied to private property used for private purposes, it cannot properly be applied to private property used for public purposes for the reason that income from the latter is controlled by government regulation while income from the former is not. After quoting from court decisions, he said that it is shown that the basis of the earnings to which a carrier is entitled for its services is the reasonable value of the property used in connection with such services, that the carrier is limited to a fair return upon that value and also to such return as it can secure from reasonable charges for its services, and that the value for rate-making purposes is not necessarily either the actual value or the value to which the party would be entitled in condemnation proceedings.

"It, therefore, appears to us," he said, "that it would be improper to apply to a value for rate-making purposes the definition applied to value as that term is ordinarily used, and what is said here about value for rate-making purposes applies with equal force, we think, to all values of property used for common carrier purposes, for the reason that before a reliable estimate of the future earnings of a carrier can be made the value upon which the carrier has a right to earn must be known."

He also undertook to show that even when used in connection with common carrier property the term "value" has no definite meaning except where the purpose for which the

value is to be used is indicated, and that in determining the value to be used in fixing rates it is not proper to consider the returns from rates already in existence, although one of the most important elements to be considered in a purchase case is the aggregate of the carriers' net earnings under reasonable schedules of rates. At the time the valuation act became a law there was not, nor has there been since, Mr. Farrell argued, more than one purpose for which the Interstate Commerce Commission would have occasion to use a final value of common carrier property. This condition, however, may not continue to exist, and on this account and for other reasons he thought the commission should describe as a value for rate-making purposes only any final value of common carrier property it may see fit to fix at the present time. If the commission finds it necessary hereafter to fix a final value for some other purpose it can consider in that connection the final value fixed by it for rate-making purposes.

The original cost to date, cost of reproduction new, depreciation, appreciation and going value, were mentioned as the most important elements to be considered in fixing the final value of property used for common carrier or other public purposes, and these elements were discussed separately in Mr. Farrell's brief. It is declared that no such term as "other values and elements of value" is known in valuation law and that when Congress inserted those words in the act it was done to avoid the appearance of having tied the hands of the commission and to make manifest its intention to leave the commission entirely free to exercise its own judgment and discretion in connection with the ascertaining and reporting of values and elements of value other than those specifically mentioned in the act. Other values and elements of value, which interested parties contend should be reported under the heading of "other values and elements of value," may be included, Mr. Farrell said, under the heading of "fair values."

In fixing the values of common carrier property for rate-making purposes, it is asserted, the commission will have occasion frequently to modify results reached by the application of general rules. For example, although in estimating cost of reproduction it is apparent that uniform rules must be used, there will undoubtedly be many cases where such application will produce a result which will either be too favorable or too unfavorable to the carrier, and where this happens the commission will take such action as may be necessary to do justice as between the carrier and the general public. If the investment accounts of the carrier, which are used in determining original cost, are erroneous either because they include items which should have been omitted or because sums of money expended which should have been charged thereto have been charged instead to some other accounts, it is assumed that the commission will make the necessary corrections.

The National Public Works Department Association will hold a convention at the New Willard Hotel, Washington, on January 13 and 14. The morning session of the first day will be spent in the organization of the meeting, while the afternoon session will be devoted for the most part to a discussion of the Jones-Reavis bill, already introduced in Congress, to create a department of public works. In the evening the practical results to be achieved by such a department will be presented by Hon. Frank C. Reavis, member of the House of Representatives. Following this, General R. C. Marshall, chief of the construction division of the United States Army, will address the convention on the practical economies secured by standardization of construction activities.

Orders of the Regional Directors

EXPORT BILLS OF LADING.—Circular 293 of the Central Western regional director contains instructions regarding the issuance of through export bills of lading to the Orient via New Orleans in connection with the Osaka Shosen Kaisha Steamship Lines and the Ocean Transportation Company.

Supplement 7, canceling Supplements 1, 3, 4, 5 and 6 to Circular 282 of the Central Western regional director, contains a complete list of steamship lines in connection with which through export bills of lading may be issued.

Employment of Apprentices.—The Northwestern regional director, file 42-1-100, states that statistics show that while there are 42,193 journeymen in the mechanical departments of the railroads in this region there are only 1,880 apprentices, or a ratio of one apprentice to 22.44 journeymen. Under the national agreement 6,559 additional apprentices can be employed. The circular adds that diligent efforts should be made to obtain the full ratio of apprentices, and special attention should be given to see that they are thoroughly instructed in the various branches of the trade in order that a sufficient supply of properly trained mechanics may be provided in the future.

Freight Car Distribution.—Supplement 18 to Circular 70 of the Northwestern regional director contains the following instructions, which are intended to assist in meeting the increased demand for grain cars:

"Effective at once, arrange to give the repair of grain cars preference over other classes of equipment. Additional forces should be employed where they can be used to advantage. Report as of Saturday of each week, the number of cars repaired and made fit for grain loading for the preceding week.

"Reports continue to reach me of grain cars used in other service where other equipment is suitable and available. Unless cars are being loaded directly into grain-producing territory, instructions should provide for the use of non-fit cars. From now on special attention must be given to supplying grain cars, particularly for the heavy corn crop, which now demands attention."

Unloading of Coal Cars.—The Northwestern regional director, in file 44-1-193, suggests that traffic and division officers should keep the necessity of prompt unloading of coal cars before all receivers of coal, and in any case of any delay in unloading should make a personal call upon the consignee and point out the necessity for unloading cars promptly.

Consignments to "Shipper's Order."—Circular 296, canceling Circular 259 of the Central Western regional director, calls attention to Rule 7 of the Consolidated Freight Classification No. 1. This rule, relative to consignments to shipper's order, applies to all shipments whether or not the tariffs governing are subject to the consolidated classification rules, also whether or not the billing of cars to "shipper's order" without specifying person to be notified is prohibited.

Inspection and Compression of Cotton.—Supplement 2, canceling Supplement 1, to Order 235 of the Southwestern regional director amends Section 3 of the original circular so that compressed cotton, properly covered with bagging and which is to be further compressed for high density within the territory governed by these rules, may be accepted without patches, provided in addition to the shipping marks there is firmly attached to each bale a waterproof shipping tag showing the name of shipper, point of origin, consignee and destination, and provided further that the shipper shows on this bill of lading "Cotton to be compressed to high density at ———." The circular also amends Section 7 of the original circular so that cotton linters compressed and shipped in lots of 75 or more bales per car, whether at car-load rates or any-quantity rates, from one shipper at one shipping point to one consignee at one destination and not to be unloaded in transit for any purpose, may be received

without tags; also cotton linters shipped through uncompressed from origin to destination, if in quantities sufficient to occupy the full available capacity of one car and at any-quantity rates from one shipper at one shipping point to one consignee at one destination.

Conferees on Railroad Bill Postpone Controversial Points

WASHINGTON, D. C.

THE CONFERENCE committee which is engaged in an effort to reconcile the differences between the Esch and Cummins railroad bills passed by the House and Senate, respectively, has held almost daily sessions with the exception of Sundays and holidays, but has thus far devoted its time principally to the ironing out of minor differences in the provisions of the two bills which are generally similar in purpose and on which it is comparatively easy to reach an agreement. Chairman Cummins of the Senate conferees has announced that considerable progress has been made as to these features of the work, but that the most important parts of the bills which are certain to arouse controversy have been set aside for consideration later, probably next week.

These include the rate-making, excess earnings, consolidation, transportation board and anti-strike provisions of the Cummins bill, some of which are likely to be sacrificed for trading purposes, but the point of deciding which will be so treated will not be reached until an agreement has been reached on what would be regarded as a fairly complete bill by those who are opposed to or not interested in the provisions named.

Among the points on which an agreement has been reached at least tentatively is the section relating to joint action by the Interstate Commerce Commission and state commissions in cases involving a conflict of jurisdiction, such as the Shreveport case. Both bills provide for co-operation and joint hearings by the state and federal authorities, and the Senate bill gives the Interstate Commerce Commission the power of final decision "to make such findings and orders as may in its judgment tend to remove any undue advantage, preference or prejudice as between persons or localities in intrastate commerce on the one hand and interstate or foreign commerce on the other hand." The original language also added "or any undue burden upon interstate or foreign commerce," which was agreed to be stricken out, thus making the effect of the provision practically that of the similar provision in the Esch bill.

Considerable attention has been devoted to the car service sections and it is understood that the Senate amendment relating to refrigerator cars submitted by Senator Pomerene was accepted with some modifications.

Swagar Sherley, director of the Division of Finance of the Railroad Administration, conferred with the committee on December 31, explaining the effect of the conflicting provisions of the two bills relating to the adjustment of the carriers' indebtedness to the government for capital expenditures and of the government to the railroads for rental.

The railway executives have filed with the conferees a memorandum outlining their objections to the rate-making sections of the Senate bill and a memorandum outlining the views of the state commissioners as developed at a meeting of the executive, legislative and valuation committees of the National Association of Railway and Utilities Commissioners, was to be presented by J. E. Benton, solicitor for the association. The conferees on Wednesday tentatively decided on \$300,000,000 as the amount of revolving fund for loans to railroads. The House bill provides for \$250,000,000 and the Senate bill for \$500,000,000.

Executives Urge Assurance to New Investors

Conferees Asked to Adopt Rule of Rate-Making to Establish Railroad Credit—Section 6 of Cummins Bill Opposed

WASHINGTON, D. C.

DURING THE recent debate on the Cummins railroad bill in the Senate there was some controversy as to whether the railroad companies were for or against the bill. It was asserted by some of the opponents of the measure that the railroads were demanding its passage and were engaged in an extensive propaganda for that purpose, while Senator Cummins declared that most of the railroad executives did not like the bill. The position of the Association of Railway Executives as to what is undoubtedly the most important provision in the Cummins bill has now been plainly indicated by a memorandum filed with the conference committee now engaged in an effort to reconcile the differences between the Esch and Cummins bills by Thomas DeWitt Cuyler, chairman, and Alfred P. Thom, counsel, dealing with Section 6, which contains the rule of rate-making as it appears in the Cummins bill.

They say that the executives would favor as a rule of rate-making a minimum of 6 per cent on the aggregate values in a traffic group if the carriers are allowed to retain what they could earn from rates thus established. The provisions of the bill, which seek to standardize the net operating income of carriers by establishing a rigid percentage rule and requiring companies that earn over a given percentage to give up a part of their earnings, are opposed as both unwise and unconstitutional. Congress is strongly urged to make a clear declaration of national policy for the purpose of improving railroad credit, that investments hereafter made will be justified by the rate structure, and for this purpose the general rule of rate-making proposed by the Senate subcommittee in the original Cummins bill is suggested as a fair basis.

An abstract of the memorandum follows:

Section 6

Before proceeding to discuss the section, we desire to state, as we frequently indicated to the chairmen of the respective committees of the Senate and House during the consideration of this legislation, that the Association of Railway Executives would favor as a rule of rate-making a minimum percentage, to be fixed in the act, on the aggregate values in a traffic group, if the amount of the percentage is adequate and the several carriers are permitted to earn, for their services rendered, as much as they can from rates thus legally established and to retain such earnings as their own. It is the opinion of the executives that such percentage should not be less than 6 per cent.

Section 6, however, as it now stands, does not do this.

Its avowed purpose is to equalize, as nearly as practicable, the values, now inherently unequal, of the transportation properties of the several railroad carriers. These properties belong to different owners. This purpose is manifest not only from the general scope of the section, but from definite and unmistakable declarations of policy which the section contains.

For example, one provision requires that the Interstate Commerce Commission "shall, as far as practicable, adjust rates, fares, charges and classifications (so) that the net operating income of the several carriers shall bear the same relation to the value of their respective properties."

This equality of relationship does not exist now and has never existed heretofore.

The section further provides that, in order "to sustain sundry carriers," a specified rate structure shall be established, but prohibits "more favorably situated carriers," if they earn

more than a designated amount, to retain a specified part of the revenues coming to them for the transportation services they render; in other words, this section requires the establishment of rates (thus making them lawful and requiring all carriers in the group to do business on that basis and to collect them from the public), the entire revenues from which "sundry carriers" are permitted to receive and enjoy as their own, whereas a part of the revenues of "the more favorably situated carriers" at the same rates for exactly similar, but more numerous and greater, services, is taken away, if the revenues exceed a specified amount. This is without reference to the number, extent or the value of the services rendered.

This assertion of power raises sharply the question whether, under our system of government, Congress may lawfully and directly, by legislative enactment, take away, to an extent dictated by legislative discretion or caprice, the property of one of its citizens and add to the property of another.

A discussion of this question of power will be postponed to a subsequent part of this note.

We shall undertake first to call attention to the question of wisdom and sound public policy which is involved.

I. Policy of the Proposal

1. The declared purpose of the enactment is "to sustain sundry carriers indispensable to the communities served by them." It cannot be denied that the method proposed is a wide and radical departure from anything heretofore favored in our American system of government. To justify an experiment so novel and so far-reaching, it at least must be certain to secure the result which is desired. That object is, as stated, to help "sundry carriers," which are those commonly referred to in this discussion as the "weak roads."

The argument is that competitive rates must, for economic reasons, be the same for all roads, "weak" and "strong" in the same traffic group; that if the "strong" roads alone were to be considered, Congress might lawfully exercise a discretion to make rates at a certain level; that this level would be too low to sustain the "weak" roads; that if the "weak" roads alone were to be considered Congress might exercise a discretion to establish rates at a higher level, but that rates thus fixed would produce too much revenue for the strong roads; and hence the plan of fixing rates high enough to sustain the "weak" roads, and of obviating the undesirable consequence of the "strong" roads earning more than Congress would like to see them have, by the simple expedient of taking the excess away.

THE PROPOSAL IS TO ACCOMPLISH THIS OBJECT BY ESTABLISHING A RIGID 5½ PER CENT RULE

No reference is here made to the additional one-half of 1 per cent which the commission may allow in its discretion for certain restricted purposes. This omission was for the sake of brevity and because the carrier would not be entitled to the full control and enjoyment of the addition and reference to it would not affect the argument. It is rigid at 5½ per cent for the general purposes of the carrier.

This object of securing a system of rates adequate to sustain the "weak" lines is to be accomplished by the enactment of a rigid statutory rule requiring rates in a traffic group to be fixed so that they will produce net revenues in the group of 5½ per cent on the aggregate value of the properties therein used for transportation purposes.

If these revenues are not as much as the prescribed 5½

per cent, the rates must go up. That is the aspect of the question which is alone considered by the advocates of the proposal, and manifestly that is the only aspect which will benefit, even temporarily, the "weak" lines.

But the proposal likewise peremptorily requires that if the revenues in the group at any time exceed $5\frac{1}{2}$ per cent, the rates shall come down. If the rates, in pursuance of this peremptory requirement, are reduced below the present level of five and two or three-tenths per cent, the "weak" lines will be injured instead of helped.

This result must injuriously affect the "weak" lines unless they secure a compensatory proportion of the increased business. Is it to be reasonably expected that they will? Their "weakness" is, at least in large part, due to their having too little business and being unable, because of unfavorable location, to get more. The increase of general business will doubtless come in largest extent from the stronger communities which are served for the most part by the stronger lines. Moreover, business which is competitive, unless the experience of the past is to be reversed, will seek for the most part the more competent carriers.

When these two forces are considered, it seems reasonable to conclude that by far the larger share of increased business will seek the more competent carriers, and that, in any reduction of rates coming as the result of the application of the $5\frac{1}{2}$ per cent statutory rule to increased business, the "weak" lines will be further weakened, rather than helped, as revenue earners.

Of course, the argument above made that the system devised to aid the "weak" lines, will, after a short time and in the process of the development of business, work out to their injury, will be at least partially answered if by the proposed system the lines which are now denominated as "strong" and are meeting from 80 to 90 per cent of the entire needs of the public for transportation, are by the process of taking away a part of their net earnings and the "equalization of values" which is proposed (thus depriving them of hope and incentive) reduced in efficiency to the dead level of the "weak" lines. In that event, there could be no inducement of superior efficiency to attract business to the hitherto more capable lines, and the weak lines might get a proportionate share of the increased business.

But this suggestion of an answer meets with two difficulties: First, while the proposed system, if successfully carried out, will undoubtedly reduce very substantially the ability of the strong lines to serve the public, and consequently their efficiency as public servants, it is doubtful whether this will be carried to the extent of taking away their entire transportation superiority over other lines; and hence, even in that event, there will be a certain amount of superior efficiency remaining which will attract the larger share of increased business; and, second, if the entire difference in transportation efficiency between the carriers is removed by reducing that of the carriers which are now rendering the most substantial service to the public, or if it is materially reduced, the policy of thus reducing such transportation efficiency of those carriers on which the public must most largely depend, would be condemned by the vast injury to the public which would ensue.

But it is insisted that the incentive to the use in the public service of initiative, energy, enterprise and efficiency would not be destroyed by the proposed plan, for the reason that it is not proposed to deprive the carriers which are at present strong of all reward of successful effort, as they are still left a part of their earnings over 6 per cent. It must be remembered, however, that they are also deprived of a very large part of their earnings over 6 per cent—of one-half of one per cent between 6 and 7 and of three-quarters of all over 7 per cent.

Is it not human nature to feel a very large reduction in

incentive to effort, if by far the largest part of the reward is to go to some one else, and is the incentive at present existing, either to investment or to effort in the railroad industry, so great that it can, with due regard to the public interest, be substantially reduced?

If there could be a difference of opinion as to whether incentive to effort and efficiency will be as great with a denial of a very substantial part of the reward heretofore possible to successful effort—as to which I think there can be no reasonable difference of judgment—there manifestly can be no legitimate difference as to whether there will be a reduction of the incentive to investors if a substantial part of the rewards of success is denied them, when these rewards are at best inferior to those which may be expected from investments in other industries.

The experiment of this transfusion of the blood of efficiency from the strong and capable into the weak instrumentalities of commerce is too dangerous to be resorted to in this important field of economics.

Thus, it is apparent that the proposed plan must meet one of two alternatives, each too dangerous to be encountered; first, when business increases so that the net revenues of a group exceed $5\frac{1}{2}$ per cent, the rates must come down, and this will injure, instead of help, the "weak" lines, unless they can secure a corresponding proportion of the increased business, which, inasmuch as they are now weak largely because of their unfortunate location and situation in respect to business, can not reasonably be anticipated; or, second, a large proportion of the increased business will be thrown to the lines that are now "weak" by the impairment of the efficiency of the lines on which the commerce of the company is largely dependent—a result which cannot be attained without substantial, and perhaps irremediable, injury to the public. Either horn of the dilemma would seem to condemn the proposal.

2. The importance of the problem, as it is called, of the "weak" and "strong" roads has been greatly overestimated from the standpoint of the public and does not justify the radical proposal to take away from some of the lines a part of their net earnings at lawful rates.

Mr. John E. Oldham, a banker of Boston, well and favorably known to the members of this committee, has made a study of this subject, and has embodied the result in an address delivered before the Academy of Political Science in the City of New York, on November 21, 1919.

In his preface he states: "Data are here presented which indicate that the number and importance of the railroads which are 'weak' because 'less favorably situated' and those which are 'strong' because 'more favorably situated' have been greatly exaggerated.

This same point is very strikingly and intelligently developed by Mr. Howard Elliott in his statement before the House committee.

The largest interest which the public has in this question is the maintenance and continuance of the facilities of transportation. The danger of any carrier, now doing a business in which any portion of the public has substantial interest, being unable to continue its service, is most remote. In fact, no instance of such discontinuance of operation by a useful carrier has ever occurred, so far as we are advised.

As pointed out by Mr. Oldham, the problem may be adequately dealt with by a fair adjustment of rates as to all carriers, except those which in their nature are mere feeders to larger lines, and the policy of consolidation suggested in this legislation would be adequate to deal with the latter part of the problem.

As to the others it takes, according to Mr. Oldham's figures, approximately 23 per cent of the gross earnings of the strongest roads to pay fixed charges and to maintain dividends, whereas it takes about 22 per cent of the earnings of the non-

dividend-paying roads to pay their fixed charges and dividends (21 per cent going, however, to fixed charges and 1 per cent to dividends), an approximate equality of conditions as to the proportion of earnings devoted to capital, which is very striking. Of course, there is undoubtedly a difference in capitalization, and it may be necessary in the orderly progress of business to correct errors in capitalization, if such errors appear.

The situation is one which can be dealt with by a calm exercise of judgment, and without any resort to radical or revolutionary measures.

Of course, there is an inequality of condition between the several rail carriers. No single carrier can be taken as a standard for all. It would not be fair to make rates for the strong alone, or for the weak alone. A comprehensive view of the condition of the various carriers must be taken and the rates, in the exercise of a wise and businesslike discretion, must be adjusted to a fair level, everything considered.

Such a method would adequately protect the public interest and give assurance of the continued operation of the instrumentalities of commerce. For the rest, it is wise to leave the matter to the orderly evolution of economic forces.

3. Aside from the consideration hereinbefore presented and aside also from the question of the lawfulness of the power thus to create and destroy property values at legislative discretion and by legislative fiat the proposal is fraught with consequences to our institutions and to our national safety too serious to be encountered.

If the power to take away from a carrier a part of its earnings at lawful rates is constitutional, its exercise would be all the more unfortunate and all the more dangerous, for then there would be no relief from it in the courts.

It must be remembered that it is the policy of these bills, and the undoubted determination of the public, to rely on private operation and private capital to furnish transportation to the public. To make this system a success, it is universally admitted that private investors must be attracted and induced—they cannot be coerced—to invest many hundreds of millions of dollars annually in improving and increasing, as commerce grows, the transportation facilities which the public must have.

This difficulty is not successfully met even if the proposal should furnish a temporary market for existing securities at present without a market. It reaches much further, and extends to the entire future of transportation. The new investor is the arbiter of the success or failure of the proposal, for he, in the nature of things, has the determination of the question of whether the required capital will be forthcoming and thus of the question whether the proposed system will succeed.

He will soon appreciate, if he does not now, that if this Congress can deprive the property in which he is asked to invest of the part of its earnings now proposed, another Congress, may take still more, and a third Congress a still larger amount, until the point is reached where the owners must resort to litigation to overthrow legislation which may spring from the political exigencies of the moment.

Moreover, the dangerous consequences can not be overestimated of introducing into our governmental system this novel and heretofore unasserted power to take away a part of the net earnings of some of the carriers at lawful rates simply because a certain Congress regards them, considered in and of themselves and for no reason other than their amount, as too large, and not as a result of a finding that the rates are unreasonable as between the carrier furnishing the service and the shipper receiving it.

If this power is wise and can be justified as to railroads which are now regulated, it will be equally wise and equally justified, and certainly equally possible, as to any other industry which may hereafter be regulated. The test of the

power of governments to regulate an industry is the extent of the public interest in it, and that is very largely a matter of legislative, as contradistinguished from judicial, determination. If Congress hereafter concludes that the public safety requires the regulation of the supplies of fuel or of food or of the manufacture of basic necessities or of money, it may lawfully extend its power of regulation to include these important subjects.

If the owner of a coal mine, when fuel comes to be regulated, happens to have purchased his property with wisdom and to have thus secured a mine in which the coal lies close to the surface and can be economically produced, and has bought property conveniently located as respects transportation and from which he can put his products into the markets at small cost, the legislative authority may, under the power here asserted, conclude that his earnings from prices fixed by law are too large and may force him to surrender a large part of his advantage of location and of his other property values, in order that some coal miners back in the hills may prosper.

And so as to food, and so as to the manufacture of essential building materials, and so as to money, when these subjects severally come to be regulated.

In fact, money is now regulated to the extent of having the interest rates limited by law. This limitation—generally 6 per cent—was put upon money when there were no large aggregations of capital. Suppose a governmental authority were to say that the above mentioned rate, while reasonable for the man having small capital, will produce too great an earning in the case of large accumulations of capital, and were to take the excess away, by a new power never heretofore asserted and subject to no limitation except the legislative will, what answer could be made to such an assertion of power if Congress may now take away a part of the earnings at lawful rates of the successful railroad, simply because the amount of the net earnings exceeds the amount which the Congress then in authority may approve?

The underlying difficulty about the credit of the railroads is the manifest reluctance to permit them a measure of business success in any way comparable to that in other fields of industry. Nothing would do more to attract the investment of new and adequate capital than to abandon this attitude of jealous restriction and to declare a legislative policy giving these carriers a business chance and assuring them of the legitimate rewards of successful service.

The proposal, we submit, is no more in the real interest of the "weak" roads than it is in the interest of the strong. In the final analysis, the road which is at present "weak" is a factor in, and must rise or fall with, an industrial system which must be fair and just and sound in order that it may be stable, and in order that, under it, any interest may ultimately prosper and be safe.

It is not in the interest of the poor man, who has any possibility of a future, that the earnings of men who prosper by reason of energy, industry and thrift, shall go unprotected and be taken away. In order for the capable poor man to become prosperous, or to become an efficient and useful factor in our social organization, he must have hope both of success and of security in the enjoyment of the fruits of his efforts.

This is as true of industrial organization as of men, and the ultimate interests of a road at present "weak" will not be promoted, even if there is for the present a temporary advantage, by the adoption of a principle in government which is subversive of the heretofore recognized foundations of the security of men in the enjoyment of what they earn. In the final analysis, this proposal is good for the "weak" roads, only if the socialization of property is, as a governmental policy, good for the needy.

It is respectfully submitted, therefore, that, from the standpoint alone of a wise public policy, the use of power pro-

posed in this section would be a grave economic error, the harmful effects of which would be far-reaching and could not be overestimated.

But, in our judgment, the proposed use of legislative power would be unconstitutional. We now proceed to a discussion of that question.

II. Is the Proposed Exercise of Legislative Power Constitutional?

The proposal is to equalize, by legislation fiat, the values, now inherently unequal, of properties owned by different persons. This is to be accomplished by one or both of two methods; first, by so adjusting the rates of the several carriers as to bring about the proposed equality; and, second, if the first method does not produce the entire result, by taking away from the successful carrier a part of its earnings.

Thus, it is not proposed to bring about the desired equalization of values by increasing up to the level of the others the values of those which are at present at a lower level, leaving the values of the more successful undisturbed. On the contrary, the proposition is to bring about the proposed equalization by reducing the values of some to the level of others, or by legislating values out of one and legislating values into another and, by this process, produce an intermediate level of equalization.

The proposal, therefore, involves the reduction of values which now exist by the means of direct legislative enactment, adopted for that clear and declared purpose. Senator Cummins has recently declared that, under rates now in existence, as well as under the rates in existence prior to federal control (which it must be noted were the result of 30 years of regulation), some of the carriers have been earning 6 or 8 and some 9 per cent, and that this will likewise be true under the 5½ per cent rule. Section 6 expressly provides that the earnings above a specified amount of such carriers as were here referred to by Senator Cummins shall be taken away.

This, by the terms of the bill, is to be done even if there is no change in rates; and earnings of these carriers would be taken away although they come from a body of rates now in existence and now entitled to be considered as not more than reasonable and just for the services rendered—in fact, from a body of rates publicly approved by the Interstate Commerce Commission in a report to Congress.

The bill likewise proposes to take away a part of the earnings, if in excess of a given amount, although every rate may be examined into by the Interstate Commerce Commission and found to be reasonable and just.

In other words, the proposal is to deprive the carriers of a part of their earnings, if over a given amount, without reference to the reasonableness or justness of the rates and with reference alone to the amount of the earnings.

It must be appreciated also that it is the purpose and effect of the proposal to take away a part of the earnings without reference to the quantity or the value of the services rendered.

Nor is any allowance made if larger net revenues come to one carrier, not from difference in rates, or from difference in values, or from difference in business, but entirely from wiser capital expenditures (reflected in economies in operation), and from more intelligent, more skillful and more economical management. In this case, as in the others, the sole test set up by the bill is the amount of the net earnings, and, notwithstanding they are the result of wiser expenditures and better management or more economical operation, so much of them as is in excess of the specified amount must be surrendered.

The fifth amendment protects the property of railroads as well as the property of individuals. It provides that no one shall be deprived of his property without just compensation. The inquiry, therefore, becomes pertinent as to what are the

elements of the property of these carriers, and whether the bill proposes to take away anything that is property.

This subject has been maturely and frequently considered by the Supreme Court of the United States, and the principles involved are no longer in doubt. Among the principles settled by the Supreme Court and which can no longer be questioned, are the following:

1. The use of property is property.

(Citations omitted.)

It is unnecessary to multiply authorities. These cases have never been questioned and the soundness of the proposition which they announce has been universally accepted. It will be noted that there is no suggestion in these cases, or in any case, of a legislative power to limit earnings from lawful rates without regard to the number or the value of the services rendered.

In fact, such a proposition is directly in the teeth of the principles here laid down. These cases declare that the use of property is property and the value of the property varies with the number and productiveness of the uses, and they thus negative the underlying idea of the proposed legislation that, no matter how great or how valuable the uses to which the property is actually put, the value of the property cannot be permitted to vary and grow with these uses, but that a part of the use may be taken away and the value of the property thus reduced to an equality with property not used so beneficially or to the same extent.

The vice of the whole proposal is that it confuses the government's power over rates with an asserted governmental power over the amount of net earnings from lawful rates.

We are aware of no case, and none has been cited so far as we have been advised, which has sustained the legislative power to directly reduce or to directly regulate earnings. All the cases confine the government's power in the matter to its power to see that rates from which the earnings come are just and reasonable. It can reach earnings only indirectly through the constitutional exercise of its power over rates.

2. Again, advantage of location is a valuable element of property and is property protected by the Constitution.

Although it is thus declared, in a case which has never been questioned but many times approved, that the value of property is largely determined by the earnings which the property brings to its owners, it is proposed by this bill, without inquiry and without reference to the rates, or to the number or value of the services, to take a part of the net earnings away, by the arbitrary exercise of legislative power, if the amount is greater than that fixed by the statute; and, although this case likewise declares that "neighborhood to the centers of business and population," which is the advantage of location, constitutes a property right, the bill proposes in express terms to deprive certain carriers of this advantage of location by taking away a part of the earnings which they make, for the very reason that they are, in the language of the bill, "more favorably situated."

Doubtless the principles above stated will not be controverted by the advocates of this legislative proposal. The attempt will be made to avoid, rather than to question, them.

The argument to sustain the proposal is, in effect, that no effort is here made to take away the earnings of a carrier at reasonable rates, for the rates, although lawfully established, are not reasonable *quoad* the carrier whose earnings exceed the amount specified in the bill, and consequently the amount of net revenues which the carrier collects in excess of the amount specified in the bill never in fact belongs to it, and hence there is no violation of its property rights in taking this excess away. This taking is to be accomplished by attempting to impress on the alleged excess "a trust" in favor of the government and thus, in contemplation of law, preventing the carrier from ever coming into possession of the amount except as an agent for the government. This is described as

a method of "recapture" of the earnings, and seems to be based upon the idea that this, or some, method of intercepting the revenues before they actually reach the treasury of the carrier will be effective to create a different legal status in respect to the ownership of the earnings from that which would otherwise exist.

Manifestly, however, if the carrier has a right to these earnings, that right cannot be destroyed by the attempt to intercept them and impress them with a trust which would be in violation of the carrier's property rights to collect and hold them as its own. Nor, if the carrier has no right to them, is it necessary to resort to this friction of "recapture" in order to deprive the carrier of them. The carrier may be required to refund directly any amount it collects to which it is not entitled. They do not become the property of the carrier because the amount has been paid into its treasury. The carrier's claim and right of ownership arises because it has rendered the service for which the amount is compensation.

So that the question of the carrier's right to these earnings must be considered and determined on the merits of the question and entirely apart from, and unconfused by, these fictions of "a trust" and of a "recapture."

If they are the carrier's property, that ends the controversy, for if they belong to the carrier it will be universally admitted they cannot be taken away by this legislative proposal. If the rates are reasonable for the service, then, under all the authorities, the revenues from them belong to the carrier which has earned them, and in that event they cannot be taken away by any device.

If, however, the rates are unreasonably high and consequently, being an overcharge, do not belong to the carrier, the question still remains and must be determined as to who is entitled to the overcharge, before the theory of the bill can be sustained. For the theory of the bill is, that, being an overcharge, the excess amount belongs to the public, and in express terms a trust in respect to such excess is declared in favor of the public.

It is easy enough to understand how a trust may arise in favor of the shipper if he is required to pay an excessive amount, but on what theory can a right in respect to something the shipper has paid arise in favor of the government? Neither the general public nor the government has paid anything. The amount in dispute has been paid by certain individual patrons of the carrier. But the consequences of this relationship to the payment are sought to be avoided by the contention that the public has a duty to see that the interest of all the people in adequate transportation facilities is protected, and it is in view of this governmental duty and of the general public's interest in transportation that an attempt is made to create a trust in favor of the public.

It is difficult to understand, however, even if this governmental duty be admitted, how that proposition affects the questions here involved. If such a duty does rest upon the government, it must be performed by the government. The duty cannot be transferred by the government to the individual patrons of the carrier, for manifestly the duty does not rest upon these individual patrons of one carrier to provide transportation facilities for the other communities which may be in need of them. The entire duty of the individual patron of a carrier is performed when he pays a fair price for the transportation service he receives. If there is a duty beyond this, it rests upon him in common with, and in no greater degree than on, every other member of the public, and the burden cannot be placed on him alone.

This bill, however, asserts an exactly contrary view. It asserts a governmental power to impress upon the patrons of a successful carrier the burden of furnishing transportation to communities other than his own and in which he has no other or larger interest, and to which he has no other or

larger duty, than any other member of the public at large. In other words, this bill seeks to impose upon the patrons and users of certain lines of transportation the burden of "sustaining sundry carriers indispensable" to the other communities which these "sundry carriers" serve.

If the rates are unreasonably high, and are made so for the purpose of sustaining "sundry carriers" in respect to which the persons who pay the unreasonable rates have no responsibility or special duty, how long will this class of shippers be content to bear this extraordinary imposition—a burden imposed on them alone?

The fact is that the proposal is an artificial device for dealing with a troublesome situation. What is really intended is not to place upon any special class of shippers a special burden, but to take from the more favorably situated and more competent carriers a part of their earnings to help other carriers which are thought to need help.

But it would not do for the legislation to admit that the earnings belong to the carrier that performs the service. To do so would be to admit a constitutional inability to take these earnings away. Therefore, to avoid the constitutional difficulty, there must be a declaration that these carriers have collected too much and that the excess does not belong to them.

But the troublesome question at once arises and must be answered: to whom do they belong—who is it that has paid this excessive amount, and why does not the excessive amount belong to those who have been required to pay too much? If so, the trust is in favor of these individuals and not in favor of the government. The declaration of the statute that the amount is negligible as to each transaction cannot alter the essence of the transaction. The government cannot justify the taking on the ground that the amount is small in each case. No statute is competent to deprive the individuals making the payment of the trust in their favor, for that is a property right protected by the fifth amendment. It must be admitted that the government has no constitutional power to use a carrier as its collection agent to collect from one of its citizens an amount in excess of what the citizen ought to pay for the service.

On the other hand, if the citizen ought to pay for the service rendered by the carrier the amount which is collected, the entire amount belongs to the carrier and cannot constitutionally be taken away. In neither aspect of the matter can a trust in favor of the government be created, and the attempted exercise of legislative power to that end must fall.

Moreover, there is still another difficulty which must be met. The question still remains whether in legal contemplation the amount attempted to be seized or recaptured is in fact excessive.

It is proposed in the bill to settle this question by a single test. That single test is the amount of the net earnings. If the net earnings exceed a certain amount, then the rates are to be considered excessive. If the net earnings do not exceed a certain amount, then the rates are not excessive.

In determining the question, the bill permits no consideration of the number of the services, of the character of the services, or of the value of the services. It permits no consideration of the wisdom of the capital expenditures in producing a property that may be economically operated, nor of the economies, the intelligence or the skill which characterize the operation of the property; it admits no force in a possible finding by the commission that all the rates are reasonable and just.

Without regard to any of these, the rates are conclusively presumed to be unreasonably high if only the earnings exceed this specified amount.

This view is exactly contrary to the decisions of the Supreme Court. That court holds, in the cases hereinbefore cited, that the uses of the property belong to its owner and

that in ascertaining the value of the property reference must be had to the number and the character of the services. The proposal in the bill is to disregard these entirely and also to disregard every element of management that goes to promote economy and to increase net earnings, and to make the question turn exclusively on the legislative judgment, arbitrarily arrived at without standard or measure, as to how much these earnings should be.

It is submitted that such a conclusion finds no support in any adjudicated case or in any principle of law heretofore accepted or regarded as sound.

III. Rule of Rate Making

There are certain things relating to the problem of rate-making that are so clear that they should be universally admitted.

In the first place, it should be admitted—and this is now being recognized in enlightened public opinion—that the highest interest of the public in respect to transportation is that the facilities and the service shall be adequate to the needs of commerce. While the amount of the charges is, of course, important, it is by no means as important as that there should be adequate and sufficient transportation facilities. It would seem clear, therefore, that the system of regulation should recognize this truth, and in ascertaining the amount of revenues which the carriers should be allowed to collect, should provide an adequate basis of credit to insure the public that the facilities and service which they need will at all times be provided.

In the second place, there should be no controversy that the rates should be sufficient to pay the expenses of operation, including labor and taxes.

In the third place, there should be no controversy that the rates should be adequate to provide revenues which will afford a fair return upon the property already held or used for the public service.

If the things thus enumerated are conceded—and it does not seem that they are open to legitimate controversy—it follows, at the least, that the rates which are established by governmental authority shall be such as will produce revenues sufficient to provide for them all; in other words, that the revenues from rates shall be sufficient to pay the expenses of operation, including labor and taxes, a fair return on the property held or used for the public service, and enough more to afford a basis of credit for the new capital which carriers must get from the investing public in order to meet the public requirements for facilities and service.

If the public interest in the adequacy of facilities and service is a paramount consideration, as we think it is, that fact should be recognized in the legislation, and a public authority should be charged with the duty of keeping itself advised as to the facilities and service which from time to time exist and the facilities and service which the public need, and as to the revenues required by the carriers, comprehensively considered, in order to enable them to furnish these facilities and service.

We, therefore, earnestly suggest that, if private investors are to be attracted, the least that Congress can do, as to rate-making, in order to give them an assurance of protection is:

To charge a governmental authority with the definite duty:

(a) Of keeping itself informed as to the facilities and service which are furnished and those which the commerce of the country requires, and as to the credit of the carriers and the amount of revenues necessary to enable them to provide the facilities and service that are needed; and

(b) Of fixing rates which will produce revenues sufficient to pay (1) the expenses of operation, including labor and taxes; (2) a fair return on the property held or used in the public service, and (3) an amount in ad-

dition sufficient, as a basis of credit, to enable the carriers, comprehensively considered in the various sections of the country, to obtain the capital necessary to enable them to furnish the facilities and service which the public need.

As above stated, there can be no doubt that all the things just mentioned must be provided for in the rates. If not, which of them can be omitted? Must not the expenses of operation and the taxes be paid? Must there not be a fair return, to be fixed at a reasonable figure by a governmental agency, on the property used to furnish the public with transportation? Is it not essential, in the public interest, that the carriers, comprehensively considered, shall have the credit necessary to enable them to obtain the new capital needed to furnish the facilities which the public must have?

And if all of these things are essential, why should Congress be reluctant to say so? And if Congress is reluctant to say so, must it not be because there is some doubt about it? If there is any doubt, why should anybody invest on the uncertainty? Is it not wise to give stability to the business of transportation by making a clear legislative declaration of the rule which will be applied and which investors may rely on? If there is any doubt about providing in the rates for any of the purposes mentioned, this is the time to say so and to give fair notice to investors. If there is no doubt, there should certainly be no hesitation in so declaring.

A prospective investor might very well reason that if Congress feels it necessary to refrain from the declaration of such a legislative policy, the administrative body, charged with the duty of fixing the rates, might reflect a similar hesitation. And that would be the end of private investment.

The sub-committee of the Senate recognized the force of these considerations and reported a rule of rate-making, which we understand was at one time slightly modified in the full committee, so as to read substantially as follows:

"Rates of transportation shall at all times be just and reasonable. In changing or modifying them from time to time in the manner provided in the act to regulate commerce, as amended, and in viewing them from the standpoint of their effect in producing revenue in any rate-making group as a whole, the commission shall take into consideration the interests of the public, the shippers the wages of labor, the cost of maintenance and operation (including taxes), a fair return upon the value of the property in the group and used for or held for the service of transportation, the requirements for additional capital in order to enable the carriers to adequately perform their duties to the public and the conditions under which the same can be secured; and, for the purposes aforesaid, the commission shall from time to time determine the value of the property in each district and so lower or advance the rates of transportation, as nearly as may be, as to provide the revenues herein mentioned."

The full committee of the House reported a rule of rate-making as follows:

"The commission shall be charged with the duty and responsibility of observing and keeping informed as to the transportation needs and the transportation facilities and service of the country, and as to the operating revenues necessary to the adequacy and efficiency of such transportation facilities and service. In reaching its conclusions as to the justness and reasonableness of any rate, fare, charge, classification, regulation, or practice, the commission shall take into consideration the interest of the public, the shippers, the reasonable cost of maintenance and operation (including the wages of labor, depreciation, and taxes), and a fair return upon the value of the property used or held for the service of transportation."

These two drafts are not very far apart. The principal difference is in the declaration as to credit.

The question again recurs, why should Congress hesitate to make a clear declaration on this subject? It must be recognized that proper credit is essential to the success of the system which Congress has chosen to rely on for transportation. If Congress hesitates to say this, that very fact indicates that the investment is hazardous. It must be borne in mind that Congress is making an appeal in this legislation to a new public—to an investment that is not as yet in the railroads—and if it fails to declare that the national policy is that investments which are hereafter made will be justified by the rate structure—regulated as they will be by governmental authority—then in frankness it must be realized that the appeal fails.

It is, therefore, our sincere hope that Congress will not be uncertain in its attitude on this question of credit.

Of the two rules above quoted, that from the Senate will give a stronger measure of assurance to new investors—an assurance which Congress may be certain is very badly needed.

We, therefore, respectfully ask why such a rule does not present a fair basis for the adjustment of the differences of opinion between the two houses?

November Deficit Increases

NET OPERATING INCOME of the railroads in November, 1919, reached the lowest point it has reached in November for 30 years, according to preliminary returns, amounting to only \$22,000,000, as compared with \$57,000,000 for this month in 1918, \$76,000,000 in 1917 and \$83,600,000, the average for November during the three-year test period. This makes the government deficit for the month \$61,000,000, as compared with the standard return of the test period, or \$53,000,000, as compared with one-twelfth of the annual rental guaranteed by the government, and brings the government's deficit from railroad operations for the year up to over \$290,000,000. Adding this to the \$236,500,000 loss in 1918 makes a total of \$527,200,000 for the 23 months of government operation without counting the expenses of the Railroad Administration and the deficits from other than railroad operations, such as Pullman car lines, express, waterways, etc., for 1919, which have not yet been reported.

When the December returns are in it is estimated that the total loss of the government for the two years will be about \$700,000,000, aside from whatever may be the results from the adjustment of the materials and supplies accounts, capital expenditures for war purposes and the maintenance accounts, etc. The administration statement does not give the earnings and expenses but a compilation of the returns to the Interstate Commerce Commission covering nearly all the roads shows the following comparison:

	1919	1918
Revenues	\$436,100,000	\$440,400,000
Expenses and taxes.....	417,000,000	383,900,000
Net operating income.....	19,100,000	56,500,000

According to this compilation the Eastern roads showed an actual operating deficit in November. Their expenses and taxes were about \$4,200,000 in excess of the operating revenues. The Western roads earned about \$20,400,000 net and the Southern roads about \$2,900,000. Compared with the November average for the three-year test period the November revenues show an increase of \$149,200,000, but expenses and taxes have increased \$213,700,000. The net ton miles of revenue and non-revenue freight handled in November aggregated 32,539,000,000, a decrease of 8½

per cent as compared with November, 1918, while passenger traffic increased.

Director General Hines on January 3 authorized a statement discussing the November returns from which those who desire to do so may derive an argument that the Railroad Administration was financially successful during the four months preceding the coal strike, July to October, inclusive, because it shows a profit for those months of \$45,200,000, as compared with four-twelfths of the annual rental, although in a parallel column it is shown that the net operating income in those months was actually \$3,300,000 less than the proportion of the annual rental earned during the corresponding months of the three-year test period, ended June 30, 1917, which were the months of July to October, 1914, 1915 and 1916.

The statement also shows that if the increased rates had been in effect throughout the period of federal control there would have been a surplus for 22 months of \$14,000,000. It might also be pointed out that, if this had been the case, while the result for 1918 would have been a profit of \$257,500,000, instead of a deficit of \$236,500,000, the result for 11 months of 1919 would still have been a deficit of some \$290,000,000. The statement follows:

"As indicated a few days ago, the operating results for November were very seriously affected by the coal strike. Detailed statistics of the operating results for the month have now become available for practically all of the Class I railroads and large terminal companies in federal operation. These results indicate that there will be a net operating income for the month of November from the operation of these properties of \$22,000,000, which represents a loss of \$53,000,000 to the government, after allowing one-twelfth of the annual rental, or \$61,000,000, on the basis of the net operating income earned during the average November of the test period.

"As it is now the end of the second year of federal operation, it appears to be a convenient time to review the operating results during the past two years of federal control. For this purpose, it seems appropriate to divide the period of government operation into four periods:

1. The calendar year 1918, which was abnormal in being a war year and also on account of the fact that increases in freight and passenger rates were effective for practically only the last half of the year, while a large proportion of the increase in wages was retroactive to January 1, 1918.
2. Six months ended June 30, 1919, which reflected the slump in freight business following the armistice and the readjustment to peace conditions. This period reflects the increased rates for the full period and the greater portion of the present wage scale. It does not, however, include the increase to shopmen which was retroactive to May 1, 1919, the full effect of which is shown in the last two periods.
3. The four months July to October, 1919, which may be said to represent approximately normal operating conditions.
4. The months of November and December, 1919, operations of which, as indicated above, were so seriously affected by the coal strike as to destroy their value for estimating normal earning capacity.

"In stating the results for these four periods in the following table, adjustments have been made for back pay included in the operating expenses for 1919, which were applicable to 1918, and adjustments have also been made for back pay in the four months ended October 31, 1919, applicable to six months ended June 30, 1919. The operations for October have also been credited with \$6,000,000 on account of per diem charges between federally-operated

lines included in the equipment rents for the month, which represent a mere bookkeeping entry.

	After allowing in each month for one-twelfth of the annual rental	After allowing for the proportion of the annual rental earned during the corresponding months of the Test Period
Calendar year, 1918.....	Loss \$236,500,000	d \$236,500,000
6 months, Jan.-June, 1919....	Loss 282,900,000	d 228,700,000
4 months, July-Oct., 1919....	Profit 45,200,000	d 3,300,000
November, 1919.....	Loss 53,000,000	d 61,000,000
Total 23 months ended November 30, 1919....	Loss \$527,200,000	d \$529,500,000

d Indicates deficit.

"The net gain or loss for these properties for the four periods named above on the basis of the accounts as they stand without making the adjustments for back pay and per diem charges was as follows:

	After allowing for monthly proportion of the annual rental	After allowing for the proportion of the annual rental earned during the corresponding month of the Test Period
Calendar year, 1918.....	d \$211,000,000	d \$211,000,000
6 months, Jan.-June, 1919....	d 292,500,000	d 238,300,000
4 months, July-Oct., 1919....	23,300,000	d 25,200,000
November, 1919.....	d 53,000,000	d 61,000,000
Total 23 months ended November 30, 1919.....	d \$533,200,000	d \$535,500,000

d Indicates deficit.

"It is estimated that if general Order 28 had been effective January 1, 1918, instead of in June, 1918, approximately \$494,000,000 of additional freight and passenger revenues would have been accrued to the Railroad Administration without any increase in operating expense. If this additional revenue had been obtained, there would have been a surplus of about \$14,000,000 from operation for the 22 months ended October 31, 1919, instead of the deficit shown above, and the loss for the entire 23 months' period would be about \$30,000,000, for which the coal strike should be held responsible.

"The following comparison of net ton miles per mile of road per day indicates a decrease of 16.6 per cent for November, 1919, as compared with October, 1919, while the corresponding decrease of business in November, 1918, as compared with October, 1918, was only 6.7 per cent, and in November, 1917, as compared with October, 1917, only 1.6 per cent. This indicates quite clearly the serious dislocation of freight caused by the coal strike.

	Revenue and non-revenue ton miles per mile of road per day		
	1919	1918	1917
January	4,275	3,878	4,770
February	4,002	4,591	4,511
March	4,059	5,273	5,192
April	4,134	5,471	5,257
May	4,524	5,226	5,617
June	4,615	5,423	5,694
July	4,878	5,487	5,441
August	5,075	5,691	5,351
September	5,625	5,731	5,217
October	5,651	5,584	5,385
November	4,711	5,155	5,298
11 months ended November 30.....	4,689	5,227	5,180

"The preliminary reports on passenger traffic during November indicate that there was a substantial increase over November, 1918, but the additional revenue on this account was not sufficient to offset the decrease in freight revenue on account of the coal strike."

Mr. Hines had previously authorized a statement on December 31 attributing the unfavorable results to be shown for November largely to the effects of the coal strike and predicting that they would be extended through December and possibly into January. The statement follows:

"It will never be possible to estimate completely the losses which the country has sustained on account of the coal strike. Among the heavy losses are those which the Railroad Administration has sustained and will sustain on account of loss of business and the extraordinary difficulties which it was compelled to overcome in order during the strike to give

the public the most extensive operation of the railroads and the widest possible distribution of the available coal. These costly results will show in large measure in the month of November and again in December and probably to a substantial extent in January and even subsequent months. Undoubtedly there will be a very large deficit in operations in the month of November, most if not all of which would have been avoided but for the losses due to the coal strike.

"These losses were of many sorts. There was in November a heavy reduction in business due to the sudden diminution of the movement of coal which is the largest single item of traffic, and due in part to the shutting down or slowing down of other industries as they ran short of coal, and yet the temporary character of the loss of business was such as to preclude the possibility of any corresponding readjustment of operations so as to reduce operating costs. On the contrary, operating costs were seriously increased in many important respects. Only from 35 per cent to 45 per cent of the normal amount of coal was produced and yet this reduced production had largely to be transported over the most abnormal routes which had never been designed for the handling of coal in the direction and volume temporarily necessitated. Again the handling of railroad fuel was subjected to extraordinary burdens. Much coal which had been stored had to be reloaded, hauled to a new destination and again unloaded. In many instances coal had to be hauled hundreds of miles in order to supply railroad fuel, whereas ordinarily the needed coal supply was close at hand. For example, coal for Eastern Kansas and Oklahoma roads ordinarily obtained from Southeastern Kansas and Eastern Oklahoma had to be hauled from Pennsylvania and West Virginia. Much of the actual revenues which will be shown for November and also for December were for coal being handled abnormal distances for railroad fuel so that the railroads using this coal, in addition to handling this coal great and unusual distances on their own lines have to include in their operating expenses the freight received on this coal on other railroads and included in their operating revenues. In many parts of the country the railroads were suddenly confronted with the necessity of burning a character of coal to which the locomotives were not adapted and with which the firemen were not familiar, with the result that substantially less efficiency could be secured.

"It is important to emphasize that these results could not have been avoided by advance storage of coal because long prior to the strike being seriously threatened the general public demand for coal was so great that abnormal storage of railroad coal could not have been obtained except by depriving the general public correspondingly of coal which it was urgently seeking. The storage of railroad coal was already in excess of normal.

"In order to meet both railroad necessities and general public necessities, coal had to be switched to an unusual extent with resulting heavy terminal costs. These difficulties were seriously accentuated in the latter part of November and throughout the greater part of December by cold and stormy weather of almost unprecedented severity for the time of year in many parts of the country.

"In addition to the many millions of dollars of loss imposed in this way upon the public through the increased cost of railroad operation on account of the strike, there is the further unfortunate effect that railroad operations for November and December, and perhaps for a substantial period thereafter, will entirely lose their value as a measure of current railroad earning capacity."

The American Society for Testing Materials will hold its annual meeting at the New Monterey hotel, Asbury Park, N. J., beginning on Monday, June 21, 1920. This is a departure from the precedent of long standing of holding the annual meeting at Atlantic City.

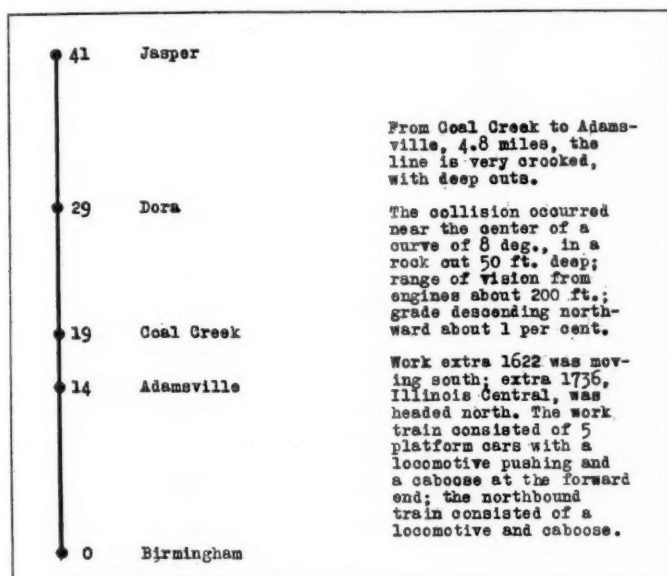
Report on Adamsville Collision

THE INTERSTATE COMMERCE COMMISSION has issued a report, dated November 26, and signed by W. P. Borland, chief of the Bureau of Safety, on a butting collision which occurred on August 9, 1919, on the St. Louis-San Francisco, near Adamsville, Ala., resulting in the death of three and the injury of 28 employees. One of the trains was a worktrain, and the victims were laborers riding on a platform car, the engine being at the rear of the train.

Adamsville is 14 miles north of Birmingham, and the principal circumstances of the collision are indicated in the sketch. On this portion of the road trains of the Illinois Central are operated with the same rights as those of the St. Louis-San Francisco. The line is equipped with automatic block signals; and at the time of the accident the weather was clear.

Conductor Bazemore of the worktrain had stationed a flagman at Coal Creek and one at Adamsville, the latter with oral but not written instructions.

At about 3:20 p. m., while at Coal Creek, Bazemore talked with the despatcher over the telephone and was told that there would be no northbound trains ahead of passenger No. 926, due to leave Adamsville at 4:48; and he then decided



to go to Adamsville to clear the track for the passenger train. He followed extra No. 1619; and then the collision occurred about 4:30 p. m., while the worktrain was moving at six or eight miles an hour and the northbound train was at a standstill. Train 1736, while on the side track at Adamsville at about 4:15 p. m. was told by Bazemore's flagman that the work extra was working near milepost 719 (about one mile from Coal Creek), but to run carefully expecting to find it anywhere between Adamsville and Coal Creek. Train 1736, leaving Adamsville after the passage of 1619 southbound, found the first block signal (721.4, less than one mile from the station) in the stop position, but did not stop. The engineman however, sounded the whistle several times and ran at only about six miles an hour.

Bazemore said that he would have protected his movement to Adamsville by sending a flagman on train 1619 but for the fact that the despatcher informed him that engine 1619 was in poor condition and, as it was uphill, the train should not be delayed.

Bazemore rode on the platform of the leading end of the caboose; he saw the opposing train when about 200 ft. from it and then attempted to reach the air valve and set the

brakes, but was pushed away from it by one of the three section foremen, with him on the platform, who rushed to get off. The report quotes Bulletin 191 issued December 5, 1918, and Bulletin 310, issued April 21, 1919, which read as follows:

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When conductors on worktrains drop off flags to one or both directions where they are at work, and who leave with these flagmen written flagging instructions to other trains to look out for them, they must not have these instructions to read to the approaching train to disregard the block; when the approaching train receives these written flagging instructions he must on arrival at block which is against him, flag through this territory until the worktrain is found. After closing in upon worktrain he may flag on worktrain to next passing track where his clear block is found * * *

* * * Instructions are intended to avoid the indiscriminate use of flagging instructions by conductors authorizing the ignoring of the blocks which they have no right to do and to avoid the possibility of trains which appear to be under control colliding with worktrains which might be moving within work limits.

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All engineers:

Please be governed by the following instructions:

When a flag is at a red block with written instructions, the instructions will carry the engineer through from this red block to the next red block, but an intervening red block must not be passed. It will be necessary to flag through that territory. Conductors will be governed accordingly and where possible to do so, place their flag with written instructions at a point where there will be no intervening block between where the flag is located and where the worktrain is to be driven into the passing track or clear.

The summary of Bazemore's testimony says that he understood that a train order should have been issued for the movement of his train southward under the existing circumstances, but that it had been his custom to act on a "line-up," given by the despatcher. He did not know of Bulletin No. 310 before the accident.

Engineman Parker of 1736 said that the worktrain flagman told him to proceed to where the worktrain was located (milepost 719) and have the worktrain go to Coal Creek to let 1736 by, but to look out for the extra anywhere else on the main line, as it might have moved from milepost 719.

Engineman Parker justified himself for passing signal 721.4 in the stop position, by producing a copy of Bulletin No. 310; but later he admitted that he had never seen this bulletin prior to the accident; neither had he seen Bulletin No. 191 until after the accident. Having not seen these bulletins he was bound by the book of rules, which requires a stop of five minutes at an automatic block signal indicating stop, the train thereafter to proceed only following a flag, and under control. Knowing, however, that it was customary to pass stop signals, he had inquired and was told that there was authority for the practice.

Conductor Hargett of train 1736 saw the worktrain flagman at Adamsville but made no inquiry as to what he was there for, although Hargett must have been near his engine. Hargett had not seen either bulletin before the accident, but after the accident a copy of No. 310 was mailed to him. He knew that enginemen sometimes passed stop signals on oral instructions from flagmen, though there was no authority for doing so except custom; and in this case he would not have sent a flagman ahead even had he known that his engineman was passing a stop signal. He had not noticed the indications of the automatic block signals as he was busy figuring on where to meet an opposing passenger train.

The conclusion of the report is that the collision was due to the failure of Engineman Parker and Conductor Hargett properly to obey automatic block signal indications. Had they stopped five minutes at signal No. 721.4 and sent a flagman ahead the collision would have been avoided. Had Conductor Hargett been riding in the cupola of the caboose, or had he required the flagman to ride there he would have known that Parker had passed a stop signal. Neither of the train crews knew of the existence of Bulletin No. 310, and those on the work train had not seen either bulletin. These bulletins do not authorize trains to pass stop signals unless flagmen are stationed at such signals, and as this was not the case in this instance the bulletins do not apply; but "there can be no excuse for the dangerous condition resulting

from bulletins being in effect without the knowledge of employees."

The placing of the responsibility wholly on the northbound train is explained in the report in a brief discussion of the forms of train orders, followed by the conclusion that the worktrain had unrestricted right to move back and forth at will between Coal Creek and Adamsville, provided it cleared the time of first-class trains.

Failure of Bazemore to give written instructions to both flagmen is censured though this failure had nothing to do with this accident.

Mr. Borland holds that under Bulletin No. 310, train No. 1736 had the right to pass signal 721.4 without sending a flagman ahead; so that the collision would have occurred without any violation of rules had the flagman been at the signal instead of at Adamsville station; both trains would have right to the track between signal 721.4 and the succeeding northbound automatic signal. "Bulletins or rules authorizing trains to pass red blocks on single track line, under any circumstances, without full flag protection, are a serious detriment to safety in train operation."

Executives Plan for Resumption of Private Operation

THE ASSOCIATION of Railway Executives and several of its principal committees held a series of meetings at Washington on January 3, 4, 5 and 6 to consider the various problems, with their multitude of details, connected with the transfer of railroad operations to the companies on March 1. The meetings of the standing, law and rate committees were held at the rooms of the Bureau of Railway Economics, and on Monday, January 5, there was a general meeting of the members of the association at the Hotel Washington. In addition, there was a meeting of the committee of seven, headed by General W. W. Atterbury, vice-president of the Pennsylvania Railroad, which is co-operating with the American Railroad Association regarding the organization of the railroads for operating purposes which is to take the place of some of the organizations maintained by the Railroad Administration.

The plans agreed upon as a result of the meetings include the adoption of rules for the distribution and interchange of freight cars, which include a per diem agreement and provision for the creation of a commission on car service, with plenary powers, to be located at Washington, where it will be in a position to co-operate with the Interstate Commerce Commission on car service matters. This commission therefore will be a development of the Commission on Car Service organized by the railroads, which was located in Washington in 1917 and which constituted the basis for the Car Service Section, later organized by the Railroad Administration, which has functioned during the past two years.

A continuation of the system of operating statistics established by the Railroad Administration through its Operating Statistics Section was also decided upon, as well as a continuation of the methods of collecting transportation charges established by the Railroad Administration, which are in general on a cash basis with uniform regulations governing the extension of credit.

At the general meeting, as well as at the meeting of the law committee, careful consideration was also given to the details of the proposed railroad legislation now in the hands of the Senate and House conferees. Thomas DeWitt Cuyler, chairman of the Association of Railway Executives, issued the following statement at the conclusion of the general meeting:

"When the President issued his proclamation stating that

the roads would be returned to their owners on March 1, 1920, I stated that the companies would be prepared to resume operation on that date. They are now actively engaged in making their preparations. It is their earnest desire to give the public the benefit of any and all improvements in railway operation which have been adopted during the period of government control, and all such changes are being carefully examined and considered.

"Among those which have been agreed upon during the past two days are:

"1. The adoption of rules for the distribution and interchange of freight cars. This step was first taken by the railroad companies during 1917 in order to expedite the handling of the country's extraordinary traffic at that time. This method was continued by the U. S. Railroad Administration through its section on Car Service, and on March 1, 1920, the railroad companies will themselves constitute a commission on car service, and every effort will be made to utilize to its highest capacity the entire freight equipment of the country.

"2. The continuation of the system of operating statistics established by the Railroad Administration. These represent a considerable advance over previous statistics and give additional information with regard to car and locomotive performance, which will be useful in promoting efficiency on the resumption of private operation.

"3. The continuation of the present methods of collecting transportation charges, as provided in the director general's order No. 25. Such continuation is calculated to secure the prompt payment of transportation charges, and has the further advantage of putting all users of transportation upon a basis of equality with regard to credit.

"The various companies are engaged in arranging to re-establish agencies for the information and assistance of shippers in routing and tracing shipments.

"The companies, through this association, are trying, in a generous and liberal spirit, to agree with the government on the interpretations of the federal control act and of the standard contract between the government and the companies. Every effort will be made to avoid litigation and make final settlement prompt and fair.

"Careful consideration is being given to the need for additional equipment, and every possible effort will be made by the companies to provide such equipment.

"The companies are, of course, vitally interested in the railroad legislation now in conference between the Senate and the House. In this connection it is worth while restating what the railroad executives feel is required to enable the companies to give to the public the best possible kind of service. These essentials are:

"1. The creation of a government body charged with the primary duty of studying the transportation needs of the country in a liberal and constructive spirit and of advising Congress and the Interstate Commerce Commission from time to time as to what those requirements are.

"2. The enactment of a rule of rate-making which shall be sufficiently explicit as to state all of the elements which would not only make individual rates reasonable, but the sum total of rates adequate to insure to properly managed railroads a basis of credit for the expansion and development of their facilities to keep pace with the growth of the country.

"3. A sufficient national control over rates to prevent discrimination or unfair competition between the rates charged in one state as against the rates charged in another state, or for interstate traffic.

"4. Liberty to simplify and stabilize railroad transportation by permitting proper consolidations, subject to public approval. Such consolidations, however, not to be destruc-

tive of actual or potential competition in railway operation.

"5. A guarantee of the present rental paid by the government for a reasonable period.

"6. The creation for use during 1920 of a substantial loaning fund which will enable the companies to complete additions and betterments started but not completed during the period of federal control.

"The problems which the railroad companies are now engaged are the concern of every citizen. Transportation is the limiting factor on that enlarged production which the entire world needs. The expansion of railroad facilities had not kept pace with the growth of the country prior to the war, and the needs of the near future will run into billions of dollars. The credit to raise these vast sums cannot be had except by fair and liberal treatment by the public authorities and by good management on the part of the companies. The companies are making every possible effort to insure this good management on the resumption of private operation, and they confidently rely on the intelligence and good sense of Congress and the American people to do their share."

In addition to Thomas DeWitt Cuyler, chairman, and Alfred P. Thom, general counsel of the Association of Railway Executives, among those present were: W. G. Besler, president, Central Railroad of New Jersey; S. T. Bledsoe, general counsel, Atchison, Topeka & Santa Fe; E. N. Brown, president and chairman of the Pere Marquette and St. Louis-San Francisco; E. G. Buckland, president, New York, New Haven & Hartford and Central New England; E. C. Lindley, vice-president, Great Northern; H. E. Byram, president, Chicago, Milwaukee & St. Paul; W. R. Cole, president, Nashville, Chattanooga & St. Louis; A. T. Dice, president, Philadelphia & Reading; Howard Elliott, president, Northern Pacific; S. M. Felton, president, Chicago Great Western; W. H. Finley, president, Chicago & Northwestern; J. H. Eustis, president, Boston & Maine; Julius Kruttschnitt, chairman, Southern Pacific; E. E. Loomis, president, Lehigh Valley; L. F. Loree, president, Delaware & Hudson; Robert S. Lovett, chairman, Union Pacific; C. H. Markham, president, Illinois Central; William T. Noonan, president, Buffalo, Rochester & Pittsburgh; O. M. Spencer, general counsel, Chicago, Burlington & Quincy and Colorado & Southern; Mark W. Potter, president, Carolina, Clinchfield & Ohio; Samuel Rea, president, and General W. W. Atterbury, vice-president, Pennsylvania Railroad; T. M. Schumacher, president, El Paso & Southwestern; A. H. Smith, president, New York Central Lines; W. H. Truesdale, president, Delaware, Lackawanna & Western; A. C. Rearick, vice-president, Chesapeake & Ohio and Hocking Valley; F. D. Underwood, president, Erie; H. D. Howe, vice-president, New York, Chicago & St. Louis; William H. White, president, Richmond, Fredericksburg & Potomac and Washington Southern; and Daniel Willard, president, Baltimore & Ohio.

Differences of opinion between some of the railway executives as to the advisability of certain features of proposed railroad legislation, notably the rate-making and excess earnings provision of the Cummins bill, cropped out at the meeting but failed to change the policy of the association, as expressed in the memorandum on the Cummins bill filed with the conferees by Chairman Cuyler and General Counsel Thom. The extent of the so-called "split" in the ranks of the executives was, however, greatly exaggerated in newspaper accounts inspired by publicity work on behalf of the Warfield association. While the executive's association would favor a minimum of 6 per cent on the aggregate values in a traffic group provided the carriers are allowed to earn and retain as much as they can from legally established rates it is opposed to the present provision of Section 6 and has suggested as a compromise the rule of

rate-making contained in the tentative bill drafted by the Senate sub-committee. Some of the executives, however, are in favor of the rule of the bill passed by the Senate, some because they regard it as generally satisfactory and others because of a fear that if it should be rejected no improvement on it could be hoped for, and the only alternative would be the Esch bill, which has no rate-making rule but leaves the whole question within the discretion of the Interstate Commerce Commission as to what is just and reasonable.

Daniel Willard, president of the Baltimore & Ohio, who some time ago resigned from the steering committee of the association because of a disagreement with its views, took a position at the meeting against opposition by the executives to the Cummins bill and Howard Elliott, president of the Northern Pacific, offered a resolution which was adopted, to the effect that the steering committee should confer with other organizations interested in the railroad legislation with a view toward co-operation. The other organizations include the Chamber of Commerce of the United States, the National Transportation Conference and the National Association of Owners of Railroad Securities, that have taken an active part in urging remedial legislation, while the latter two organizations have urged a plan similar to that of the Cummins bill. The Elliott resolution was adopted but not until after an amendment proposed by Judge R. S. Lovett had been added instructing the committee "not to agree to or recommend legislation which will take from any carrier any part of its net earnings received from rates established or approved by public authority." The vote for this amendment was 29 to 15. The minority included not only those who were in favor of the rule of the Senate bill but also several who said they had voted against the amendment on the ground that the committee needed no instructions.

At the meeting of the law committee and the general counsel on the following day objection to the attitude of the association was also expressed by a minority led by H. L. Bond, Jr., vice-president of the Baltimore & Ohio, and also a counsel for the Warfield association, and B. H. Inness Brown, general counsel for the Seaboard Air Line, who were joined by two others, out of a total of about 40 present, and announced their intention of forming a separate committee, Mr. Bond issued the following statement:

"It is the purpose of those of us who differ with Mr. A. P. Thom, counsel for the railroad executives' association, and some other attorneys, to form a committee of lawyers to assist in this crisis in doing in a helpful way what is necessary to secure constructive legislation for the railroads. We believe that it is not wise for the executives or counsel of railroads to start a propaganda, which seems to be the purpose of some of those on the other side, to defeat the constructive rate-making and financial legislation which is embodied in Section 6 of the Cummins bill. We recognize that the upper house of Congress, the Senate, with the approval and support of the prominent leaders of both of the political parties, has passed this financial legislation and we feel that we should be prepared to give any help we can to the conference in perfecting such legislation, preserving the fundamental features of Section 6 of the Senate bill. That section provides definitely that the value of all the property used in the transportation service shall be taken as the basis of rates for rate groups of carriers, and while it limits somewhat the net operating income that the several carriers may retain from earnings derived from such group rates, yet the limits prescribed permit every carrier to retain not less than six per cent on the real value of its property ascertained as such value would be ascertained in a condemnation proceeding.

"We have seen a number of attorneys of various railroads and a committee will be formed for the purposes named."

Views of Executives on Proposed Legislation

Section 6 and the Rule for Rate Making Are Covered in Another Article in This Issue

IN AN ADDITIONAL memorandum filed with the conferees on January 3 by Alfred P. Thom, general counsel, the Association of Railway Executives expressed its views as to other details of the proposed railroad legislation not covered in its previous memorandum on Section 6 and the rule of rate-making, as follows:

No attempt will be made in this preliminary memorandum to go into the details of the bills or to do more than to present certain salient features of the proposed legislation. Inasmuch as it has been necessary to prepare these suggestions in great haste, as the conferees are in session, request will be made to file hereafter a supplemental memorandum.

The references are to the Senate Committee Comparative Print, unless otherwise stated.

I. Termination of Federal Control

Inasmuch as the President has now made proclamation of his purpose to terminate federal control at 12:01 a. m. of March 1, 1919, it is assumed that the proposed legislation will be made to conform to this declared purpose.

II. Federal Control Act

It is proposed by the Senate to repeal the federal control act, preserving certain specified rights and powers. It is proposed by the House to leave the act in force, except as to certain powers which the President is forbidden to exercise after the end of federal control. Whichever plan is adopted, it becomes necessary to consider how the respective proposals will operate in respect to the settlement of matters between the government and the railroads, to which we respectfully call attention under the next heading.

III. Settlement of Matters Arising

Out of Federal Control

Beginning at line 13, page 6 of the House bill; beginning with line 15, page 85, of the Senate bill.

Apparently neither of these provisions modifies Section 2 of the federal control act. By that section the President is not permitted to pay more to any company with which no agreement has been made than 90 per cent of the estimated annual amount of just compensation. It is respectfully submitted that this limit of 90 per cent should now be removed, and that the President should be authorized to pay the entire amount of compensation not exceeding the maximum set by Section 1 of the federal control act as modified by the exceptional conditions in the sixth paragraph of Section 1.

Moreover, it is respectfully submitted that the power of the President to continue to make contracts to cover the period of federal control should not be terminated by the return of the roads. A large number of contracts have not yet been made and it would be very convenient to permit the director general and the roads to agree upon a contract which would be the basis of the settlement of matters between them.

If one or other of these provisions is not adopted, there will be no way for a carrier to obtain more than 90 per cent of its compensation without resorting to the method prescribed by Section 3 of the federal control act, which would mean litigation as a method of settlement and would be very objectionable, and, moreover, might involve the necessity for special appropriations from Congress to pay any amount thus found due.

IV. Interurban and Street Railways

House bill, page 6, after line 10.

We respectfully ask that a provision be inserted excluding interurban and street railways from this legislation.

Those interested in carriers of this class fear the extension of street railroad wages and working conditions over their lines in the event their properties are included in the system of regulation, and they also are convinced that the national authority is not so related to the great volume of their business as to enable the national authority to make their rates sufficient to meet the burden of street railroad scales of wages and working conditions. The American Electric Railway Association has taken action in conformity with this request, and we respectfully bring it to the attention of the conference committee.

V. Executions on Judgments Based on Causes of Action Arising During Federal Control

Page 10, House bill; page 86, line 14, Senate bill.

At the end of Section 204 of the House bill, and after line 14, page 86 of the Senate bill, we respectfully ask that the following be inserted:

"No execution or process, other than on a judgment recovered by the United States against a carrier, shall be levied upon the property of any carrier where the cause of action on account of which the judgment was obtained, grew out of the possession, use, control or operation of any railroad or system of transportation by the President under federal control."

The reason for this is that the federal control act permits actions to be instituted by any person against a carrier for a cause of action arising during federal control, and for which the United States is responsible. We seek, by asking the inclusion of the above provision, to avoid the seizure of the property of these carriers for the debts of the United States, and thus to avoid the necessity of the carriers paying such debts and collecting them out of the United States. The transaction is one between the United States and the person entitled to the cause of action, and should be pursued between those parties alone, without embarrassing or involving the carrier, which, in reality, has no relation to the matter.

VI. Refunding of Carriers' Indebtedness

to the United States

Section 205 of the House bill, beginning at line 9, on page 10; Section 2 of the Senate bill, beginning at line 23, on page 89.

It will be observed that the provision of the House bill makes it obligatory on the President to set off the current indebtedness of the government to a carrier against the carrier's capital indebtedness to the government incurred for additions and betterments made during federal control. We respectfully request a re-consideration of this provision.

Indebtedness of the carriers to the government are of two classes: First, indebtedness for additions and betterments put upon the property by order of, or with the approval of the President, during federal control, and which, by Section 6 of the federal control act, the President was authorized to charge to the carriers, this proceeding involving the incurring of a very large indebtedness by the carriers to the government on capital account, which was made immediately payable; and, second, indebtedness of the carriers to the

government for money loaned, or due otherwise on open account.

The indebtedness of the government to the carriers is all on open or current account, arising out of unpaid compensation for the use of the properties, or from moneys or other assets received from the carriers, or from liabilities otherwise arising.

Manifestly, when an adjustment is made, if it be found that the government owes anything on account of compensation, which is an open and current account indebtedness—not an indebtedness on capital account—the carrier should be permitted to have its indebtedness to the government, which is likewise an open and current account indebtedness, satisfied by so much of the amount of compensation as the government is permitted to use as a set-off.

The House bill as it now stands would, however, forbid this, and would require that the current indebtedness of the carriers to the government remain unsettled, and that all amounts, permitted by the contract to be offset, be used in reducing the amount of the capital indebtedness to the government, incurred for the carrier by the President during federal control.

The amount of this capital indebtedness was made immediately payable because of the exigencies of the government. The government was monopolizing the sources of capital supply for war purposes, and felt obliged to keep others out of the financial market. If the carriers had been acting for themselves, their customary method of procedure with respect to these large capital expenditures would have been to finance them in advance of the work by obligations running over a considerable term of years. Inasmuch as they could not do this, it would seem only equitable for the government now to fund the capital expenditures for a reasonable period, say 10 years, and at a reasonable rate of interest.

This would not be only equitable, but distinctly in the public interest. Congress has selected the system of private ownership and operation as the reliance of the public for transportation. The system thus selected must be made competent and efficient. To do this the carriers must be able to obtain from the general public a large amount of additional capital in the immediate, or near, future. This, of course, could not be done if there was a large amount of open account indebtedness immediately due and not provided for. No appeal could be successfully made to the public to furnish capital for a carrier having a very large amount of floating indebtedness, the payment of which might be demanded at once.

The amount of the requirements of the carriers for additional capital will, after the termination of federal control, be caused by their need to provide for maturing capital obligations and for new equipment and additions and betterments essential to the efficiency of their transportation service.

The enormous amount needed for these purposes will be somewhat indicated by the following: In order to meet known and classified maturing obligations falling due year by year, the carriers of Class 1 will need on the average, exclusive of maturing equipment obligations, more than \$139,000,000 each year of the next ten years, and perhaps an even larger amount. In fact, Chairman Esch, in his report to the House on this bill, filed a statement showing that the maturities, including equipment obligations, falling due in 1920, would aggregate \$222,200,692, and those falling due in 1921 would aggregate \$333,423,733. See House Report, pages 38-41.

In addition to this, the carriers will need each year for new additions and betterments, amounts variously estimated at from \$575,000,000 to \$1,000,000,000. It will probably be much more than the smaller of the figures just mentioned. The director general has, in a recent address, indi-

cated that it has been necessary for the Railroad Administration, during federal control, to limit the additions and betterments, put upon the properties of these carriers, to those absolutely needed for war and other pressing transportation uses; and yet, in the year 1918, he spent for additions and betterments about \$576,000,000. If this, as stated by the director general, was not an adequate amount, the capital requirements of the companies, if met to the extent required by the public interests, would probably not fall far short of \$1,000,000,000 a year.

If the indebtedness of the carriers to the government remains unfunded and must be provided for elsewhere, the amount which they will have to go into the market to secure will be that much larger and will become absolutely prohibitory.

The carriers must attempt to secure the required amounts at a time when a new system of regulation will probably be in effect. Much of the money will be required before the results of that system have been satisfactorily demonstrated to the investing public. The carriers will also have to go into a market disturbed by war conditions, and where there will be tremendous competition for the funds available for investment.

And yet it is in the public interest that the carriers succeed in obtaining this money. The indebtedness of the carriers to the government for additions and betterments, incurred under the circumstances above mentioned, ought not be allowed to constitute an additional complication and embarrassment in this situation.

To avoid this, the government should not hesitate to carry this indebtedness for 10 years, in view of the fact that the reason it was made immediately due grew out of the war and the public needs.

It is certainly not too much to expect this of the government in regard to its own domestic transportation systems, on which its own people are dependent for their access to the markets, when for war purposes it loaned Belgium, at a time when Belgium was practically subjugated, more than \$343,000,000; France more than \$3,000,000,000; Great Britain more than \$4,000,000,000, and Italy more than \$1,500,000,000. There is no suggestion that these loans to foreign governments should be regarded as immediately due, and doubtless they will be funded. Certainly the government will not regard itself as a mere collection agency in regard to them. There are other and broader considerations which control the matter of this foreign indebtedness.

This should also be true in respect to the indebtedness of the railroads to their own government. This indebtedness was incurred under peculiar conditions and for war purposes, and enlightened public interest requires that the indebtedness be treated in such a way as not to hamper or break down the transportation systems of the country.

In adjusting the indebtedness of the government to the carriers, and of the carriers to the government, offsets, where permitted to be made at all, should be made of current account against current account, instead of attempting to offset *current* indebtedness of the government to the carriers against the *capital* indebtedness of the carriers to the government for additions and betterments. To do otherwise would require carriers to pay their capital indebtedness out of their current assets—a thing which is never done, except to a very limited extent. Current assets must be used by the railroads for current purposes, that is, for the most part, to pay current open account debts.

Moreover, it is in the public interest that the carriers should have, if possible, a working capital adequate to take care of the abnormal expenses to which they will be put in re-forming their organizations, in getting back their diverted traffic, and in bringing home and putting in proper order, their scattered equipment. Accordingly, we ask, in cases where money is due on account of compensation, that the

government, instead of regarding the matter merely from the standpoint of a collection agency, pay to the carriers a fair working capital (estimated to amount to one month's operating expenses), before it begins to reduce the amount to be funded.

Our request, therefore, is that a funding provision be inserted in the legislation which shall require such offsets as may be made, to be made, first, on the principle of current account against current account, and only permit any balance of such offset to be made against the capital indebtedness of the carriers for additions and betterments; the remainder due for additions and betterments to be funded and carried by the government for 10 years at a reasonable rate of interest.

We further ask, in cases where enough is due by the government to a carrier for the purpose, that the government shall pay the carrier one month's operating expenses as working capital before making any offsets or deductions.

This may be accomplished by taking the Senate provision on the subject of refunding, and adding at the end of line 23, page 90 (page 9 of the comparative print), the following:

"Such application shall be made, first, upon the class of indebtedness fundable hereunder in notes payable on demand, any remainder to be applied on the class of indebtedness fundable hereunder for 10 years."

VII. Existing Rates to Continue in Effect

The Senate provision on this subject seems to have been omitted from the comparative print, and will be found in the Senate bill, page 89, lines 19 to 22. The House provision is found on page 11 of the comparative print, beginning with line 3, page 12 of the House bill.

The two provisions differ principally in that the Senate continues the rates, fares and charges, and divisions of joint rates, in force at the time of the repeal of the federal control act, in effect "until changed by competent authority;" while the House bill continues them in force and effect "until thereafter changed by state or federal authorities, respectively, or pursuant to authority of law."

There may be an important difference between these two provisions. This difference may be illustrated by the power in respect to divisions of joint rates. The power to change "by competent authority" in the Senate bill, may be broad enough to include a change in existing divisions by the carriers themselves; but it is considered doubtful whether the provision in the House bill which authorizes such change only by the exercise "of state or federal authorities, or pursuant to law" is broad enough to permit a change in divisions by the parties.

This, we submit, should be made entirely clear. An adequate supervisory power over divisions made by the carriers themselves is provided by both bills. (Senate bill, p. 176, beginning at line 30; House bill, p. 64, beginning at line 12; comparative print, p. 73). The divisions put into effect by the director general during federal control may not in any degree adequately reflect the rights or equities of the individual carriers under the changed relationship of private operation, and to avoid the necessity of keeping such a basis in effect until all divisions in the United States can be reviewed by the Interstate Commerce Commission, would justify an authority to the carriers to agree upon proper divisions in respect to the divisions now in effect, as they would have the right, under the proposed legislation, to agree in respect to any change in the divisions hereafter made.

VIII. Guarantees to Railroads After

Termination of Federal Control

Sec. 207 House bill; House bill, p. 12, beginning with line 19; Senate bill, p. 94, beginning with line 21.

The House bill provides for the continuance of this

guaranty for six months; the Senate bill, for its continuance until the commission renders its decision in respect to applications for changes in rates, not later than four months after filing with the commission of amended schedules, which shall be done within 60 days after the end of federal control.

It would seem that a longer period than six months should be allowed for a readjustment of the rates. It must be appreciated that, in order to get the rates properly readjusted, the applications for the increase must be passed on by both the federal and the state authorities. Considering the enormous task involved in preparing a statement of the readjusted rates, it is doubtful whether six months is adequate to get the work done by the Interstate Commerce Commission. The work before state commissions would doubtless involve a still longer period, and many of the interstate rates could not be made effective without corresponding changes in state rates.

It, therefore, is submitted that six months is not an adequate time. Certainly less than six months would not be adequate, and, therefore, if one or the other of these provisions is to be adopted, it would seem that the House allowance of time is more reasonable.

When we come to consider the amount of the guaranty, the House provision confines it to the amount of the corresponding six months during the test period; whereas, the Senate provision gives a proportionate part of the year. If the railroads had been returned to their owners on January 1, the House provision would doubtless have made the guaranty smaller in favor of the government. As they will not be returned until the first of March, the reverse may be true.

Moreover, the House bill confines the guaranty to carriers by railroad, or partly by railroad and partly by water. It must be remembered that properties other than those of strictly railroad carriers, or of carriers partly by railroad and partly by water, were taken over by the government, and the guaranty should be broad enough to cover these other properties. Besides, the guaranty should cover the compensation agreed on in any contract with the director general.

In considering the properties taken over, it will be found that there are certain cases in which, under the federal control act, the compensation differs from the railway operating income. There are other cases in which the President has taken over properties and has made contracts with companies that had no account denominated "railway operating income" during the test period. An illustration of this class of cases is that of companies owning fruit or refrigerator cars.

There is still a third class in which the President elected to take over not only the operating properties of a company—a terminal company, for example—but the benefit of leases or other properties made to outside parties. An illustration of the latter is the Southern Pacific Terminal Company, which operates wharves and docks, and owns a lot of warehouses and a grain elevator, which, at the beginning of federal control, were under lease to outside parties. The President took over these wharves and docks, and also the benefit of the leases on the warehouses and elevator. This was done in order to control them, and the President has received the rent accruing under the leases.

The language of the House bill is not broad enough to cover any one of these three cases. If the House bill is taken as a basis, we respectfully suggest that the following amendment be made:

Add after the word "period" in line 18, page 13, of the House bill, the following:

"Provided, however, (1) that if the amount of agreed compensation in any contract between the President and a carrier differs from its average annual railway operating income for the test period, the amount of the guaranty to such carrier shall be the proportion of such agreed amount of annual compensation which the aver-

age of its railway operating income for the three corresponding six months of each year during the test period bears to its average annual railway operating income for the test period; and (2) in case of any property in respect to which there is an agreement between the President and a proprietary company which, during the test period, had no account denominated "railway operating income," then the amount of such guaranty shall be the proportion of the agreed amount of annual compensation which the average of its net income for the three corresponding six months of each year during the test period, from the properties taken over, bears to its annual net income from the properties taken over for the test period; and (3), in cases in which the President took over properties, other than strictly carrier properties, to be used by him, and also the beneficial interests of the lessee in leased properties, the guaranty shall be for the amount of the average net income for the three corresponding periods of six months each during the test period, for the properties and leases so taken over."

IX. Statement of Accounts to Ascertain

Amount of Guaranty

House bill, page 15, lines 16 to 20; Senate bill, page 12, lines 10 to 16. We respectfully ask that paragraph (4), beginning with line 16 on page 15 of the House, be amended to read as follows:

"(4) The commission shall require a restatement of the expenses (other than for maintenance of way and structures, and of maintenance of equipment) for the guaranty period, to the extent necessary to correct any abnormal charge or credit to such expense for such period; likewise, the commission shall require a restatement of expenses and revenues for the guaranty period so as to include therein all revenues and expenses accruing due and applicable to such period, which have not been included in the accounts for that period."

The reason for making this charge will be apparent when attention is called to the fact that defining the guaranty as a railway operating income ascertained in the manner provided by Section 1 of the federal control act of March 21, 1918, will produce uncertainty and confusion in some instances, and in others inadequacy and injustice. At the beginning of federal control the Interstate Commerce Commission ruled that items of lap-over revenues and expenses should be included in the proper revenue and expense accounts, and afterward taken out and debited or credited to the director general of railroads or to the corporation, as might be appropriate. It is proposed to have the same kind of accounting at the end of federal control. Assuming that the roads are to be returned to their owners on March 1, 1920, the revenues for March will have some items therein that will subsequently be credited and paid to the director general; and likewise the March expense account will contain items of expense which will afterward be charged to and settled by the director general. After the first two or three months these items will not be very heavy, but they will come along for months after the guaranty period is closed. Therefore, some provision should be made in the proposed bill to take care of this situation, both as to revenues and expenses. In order to do this, the above change in paragraph (4) is suggested, which allows the proper readjustment to be made by the commission of both credits and debits.

X. Advances to the Carriers During the Guaranty

Period on Account of the Guaranty

The House provision is found on page 13 of the comparative print, beginning with line 7, page 15. There is no provision on the subject in the Senate bill.

It seems essential that there should be some provision; and we respectfully urge the conference committee to agree upon an adequate provision to cover this point.

XI. Rate Making

Senate bill, p. 98, Section 6; House bill, p. 40, line 8; comparative print, p. 54.

We have made objections to Section 6 of the Senate bill in the brief already filed with this committee, which will be found reproduced as an appendix to this memorandum, and which we ask shall be read in connection herewith.

The point made in that memorandum, as to the purpose of Section 6 of the Senate bill to *equalize values*, is emphasized by a provision in Section 38 of the Senate bill, page 168, lines 12 and following, authorizing the commission to approve divisions which will satisfy certain conditions therein prescribed, one of which is that they will tend to "*equalize earnings between the carriers*."

The House bill, page 54, comparative print, makes no change whatever in the rule as to rate making as it is stated in existing law. This simply declares that all rates shall be reasonable and just, thus setting no standard, and providing no assurance to prospective investors beyond that vague and uncertain statement. The effect of this is to leave the matter of what the rates shall be entirely to the discretion of the administrative body. It furnishes to it no definite standard whatever, and thus places the fate of all the railroads in the hands of a commission with no standard, guide or mandate, except one so vague that its administration must vary with the membership and the varying conceptions of the commission which, from year to year, is liable to change in personnel. Unless there are certain principles of a definite nature declared by the statute, there can be no certainty as to a stable or constructive policy. Without more assurance of stability than is involved in a rule such as now exists, it must be apparent that no progress is made toward solving railroad problems and putting the transportation of the country upon a more certain and assured basis.

We, therefore, earnestly urge upon the committee to agree upon a rule of rate making which shall give assurance to the investing public that the essential element of stability in their investments will be regarded and provided for in rate making. For a more extended statement of the reasons for this request we refer to the memorandum on Section 6, and the rule of rate making reproduced in the appendix.

XII. New Loans for Railroads

House bill, p. 18, beginning with line 11; Senate bill, p. 93, beginning with line 11.

In the House bill the sum of \$250,000,000 is appropriated to cover such loans; in the Senate bill, the sum of \$500,000,000. The necessity for at least the larger sum of these two has been explained to the chairmen of the two houses by the steering committee of the Association of Railway Executives.

It has recently been found that, under existing market conditions, there is difficulty about floating even a gilt-edge general equipment obligation, and the probability must be faced that for a time, at least, in the disturbed conditions following the war and following a new system of governmental regulation of railroads, there will be little, if any, available market for railroad securities, and accordingly little, if any, opportunity to secure necessary funds from the public to keep the railroad facilities up to the requirements of the public.

A great deal of work involving additions and betterments is now in progress, and it will require a large amount of new capital in order to continue this work. It will be most unfortunate if the work on these additions and betterments has to be suspended. There would be a large amount of loss from the suspension, and, besides, the public would be deprived for a considerable period of facilities which they need. Accordingly, it seems absolutely necessary that the

government should provide for loans to the carriers for a limited period. The director general has estimated the amount that could be actually expended during the remaining ten months of 1920 at \$400,000,000, but the requirements of the companies for commitments during this 10 months, or in a short time thereafter, will not be less than \$750,000,000.

It would seem prudent, therefore, to adopt the larger figure of the two above mentioned. If it were not for the opinion which seems to prevail that the authority of the conferees does not extend to an amount larger than the largest contained in either of the bills, we would seek to impress upon the conferees the necessity, which we believe exists, for an amount even larger than the largest amount in either bill.

Attention is called to paragraph (d) of the House bill beginning with line 15, on page 20—also page 20 of the comparative print. This provision undertakes to make loans made by the government preferred liens upon the income and property of the applicant in the same manner and to the same extent that certificates issued by the receivers of the United States courts are preferred liens.

It is respectfully submitted that it is not competent for legislation to do this. The carrier itself could not, by agreement, supersede an existing lien on its property, and there is no power in Congress to take away, without compensation, the property right of a creditor already entitled to a lien.

In fact, the authority which a court in a receivership proceeding has to place a receivership obligation in advance of an existing lien is confined to the rights of the parties before the court, and is made possible only as a necessary means of granting the application of the parties for relief. For example, if the party before the court is the second mortgagee, asking for the foreclosure of his mortgage, the court would have the right, without infringing on his rights, to do anything necessary to give him this relief, including the issue of receiver's certificates to take rank ahead of his mortgage, but, even in that case, the court could not put such receiver's certificates ahead of the rights of the first mortgagee.

We respectfully submit, therefore, that this latter provision be eliminated.

XIII. Boards of Directors

Senate bill, p. 27, line 12.

Is it not possible to eliminate the provision of the Senate bill providing for representation of labor and of the public on boards of directors? Certainly this provision should be reviewed in the light of the conclusion finally reached as to the labor sections of the legislation.

It is exceedingly doubtful whether labor desires such representation. Even if it does, the proposed provision would relieve the boards of directors of a portion of the responsibility to the public for the performance of the duty of the carrier, and would impose a part of that responsibility upon labor and the public itself. It would, moreover, deprive the stockholders of the company of a board of directors which they can hold responsible to the extent now possible for the proper protection of their interests, and would change the management of the roads so fundamentally as to impair the desirability of ownership in such an industry. We hope it will not be found necessary to make such a substantial departure from the principles which have heretofore controlled.

If the policy is to be followed, however, we respectfully ask that the word "eleven" in line 24, page 127, be changed to the word "twelve," and the word "eleven," line 1, page 128, be changed to the word "twelve."

This amendment is desirable to take care of the Richmond, Fredericksburg Potomac Road. The state of Vir-

ginia owns about one-sixth of the stock of that company, and the laws of Virginia provide that the state shall appoint such a number of the directors as shall bear to the whole number of directors of the company the same proportion, as nearly as possible, as the stock held on behalf of the state in such company bears to the whole capital stock outstanding.

The majority of the stock of the company is owned by the Richmond Washington Company, which in turn is owned equally by six railroad companies.

There are now eight directors of the Richmond, Fredericksburg & Potomac, one appointed by the State of Virginia, six allotted to the six interested railroad companies, and one elected by the outside stockholders. It is desirable that all these interests should continue to be represented on the board. If only one member of labor and the public were required on boards consisting of 12 directors, the representation of these various interests would be as follows: one director for the employees, one for the public, two for the state, which would leave eight directors to be elected by the stockholders for the outside interests and for the majority holding of the stock. If the bill is not so amended, it would become necessary to give two directors to the state, the four directors provided for in the bill, which would leave only five to be elected by the other interests, and this would be too small a proportion, considering the necessity that each proprietary company shall have representation on the board.

XIV. Labor

Page 42; House bill, page 22, line 25; Senate bill, page 143, line 8.

The attitude of the railway executives on the question of provisions in respect to labor has been announced to one or both of the committees, and is well known. We regard continuous and uninterrupted service in transportation as absolutely essential to the public welfare, and the question of whether or not the integrity of the transportation service shall thus be preserved is primarily and principally an issue between the public and those who oppose. It can not be helpfully or usefully converted into an issue of a private nature between employers and employees, and hence the railway executives have steadfastly adhered to the position of not attempting to interfere, and are leaving the matter to be determined by Congress upon its responsibility to the whole people.

Without attempting to discuss the general policy to be pursued, we deem it our duty to point out a consequence of a provision in the House bill which makes permanent the conditions in respect to employment which were adopted under war conditions and largely for war purposes.

The specific provision referred to will be found on page 27, beginning with line 12 of the House bill, which declares that all decisions of a general character heretofore made by the United States Railroad Administration affecting the questions of wages, hours of service, or conditions of employment, are hereby confirmed and shall apply to all carrier lines subject to this act. Decisions have been rendered by the U. S. Railroad Administration, and which apply to the individual carriers subject to the provisions of this act, shall remain in effect until superseded by mutual agreement between the carrier and the employees or by decision of Railway Board of Adjustment Numbered Two, or Railway Board of Adjustment Numbered Three, or the proper Commissions on Labor Disputes made in accordance with the provisions of this act.

The undoubted effect of this will be to perpetuate all decisions of a general character, and also all decisions which apply to individual carriers made by the U. S. Railroad Administration. This is apparent because the decisions as to individual carriers must remain in effect until superseded by mutual agreement, or by the decision of certain boards, the membership of which is equally divided be-

tween the employers and employees. If there is no decision, there is no change. Consequently, there can be no change from what has been done by the U. S. Railroad Administration without the consent of the employers.

Of course, we can not conclude with any confidence that there will be no change hereafter in economic conditions, but even if there is such a change, conditions must remain as heretofore established by the Railroad Administration unless the employees consent. This, of course, puts the whole matter in the hands of the employees, and seems to us very unwise from the standpoint of the public.

XV. Rates Lowered to Meet Water Competition

Senate bill, page 166, line 19.

This provision prevents a carrier from increasing any rates which have theretofore been reduced to meet water competition, unless, after a hearing by the commission, it shall be found that such proposed increase rests on a cause other than the elimination of water competition.

This provision would prevent the commission from permitting an increase of a rate thus lowered, even as a part of a general increase of rates, and even if such increase is necessary to establish a harmonious rate system and to prevent discrimination.

It seems to us that the discretion of the commission ought to be enlarged. It is entirely conceivable that an increase of a rate theretofore reduced for the reason mentioned, might be not only justified, but required in the public interest.

We, therefore, suggest the insertion, at the end of line 25, of the words "or is justified in the public interest."

XVI. Division of Traffic or Earnings Between Carriers

Senate bill 168, line 12, and following.

Under this provision any carrier which desires a part of the traffic or earnings of another carrier can file its application with the Interstate Commerce Commission. That commission is empowered, upon such application, and under the circumstances there set out, and, if further of opinion that such division of traffic or such division of earnings will tend to equalize earnings between the carriers, and will not unduly restrain competition, to approve and authorize such division of traffic or earnings between the carriers. If the word "authorize," as here used, is construed to make lawful the division of such traffic or earnings without the consent of all carriers interested, the result would be to take the traffic and the earnings of one company and give them to another. This would be a most serious departure from the conception heretofore universally entertained of property rights of the carriers, and would be destructive, and, in our opinion, would be unconstitutional. If such a provision is to be left in the law we suggest that it be amended so that the words "if assented to by all the carriers interested" be inserted after the word "authorize" in line 22.

XVII. Reparation

The latest annual report of the Interstate Commerce Commission contains the specific recommendation that the present act to regulate commerce should be amended so as to provide that there shall be no recovery of reparation where a rate has been found unreasonable except upon proof that the person paying the rate has been actually damaged. In that report there is a reference to the Darnell-Taenzer Case, 245, U. S. 531, decided by the Supreme Court of the United States, in which Mr. Justice Holmes held that any one who had paid a rate found to be unreasonable could recover the excess over a reasonable rate without regard as to whether there had been actual damage or not.

In the International Coal Mining Case, 230, U. S. 184, it was held that in suits for reparation arising under Sections 2 and 3 of the Act, there could be no recovery of reparation unless the person claiming it could show that he had been

actually damaged by reason of the discrimination, the rule governing the commission in awarding damages in such cases being the same as that which prevails in the courts.

Since the decision in the Darnell-Taenzer Case, the Interstate Commerce Commission has felt that it was deprived of all discretion in awarding damages where rates are found unreasonable.

The commission understands, and so states in its report, that this rule of law works a very great injustice, and indeed, brings about the very discrimination which the act was intended to prevent. This arises from the fact that when a shipper pays a given rate, he adds the rate to the price of the product. If thereafter he recovers the excess over what the commission considers to be a reasonable rate, he is simply getting his money twice, whereas the ordinary shipper, who does not resort to the commission, fails to receive this second award. We, therefore, suggest that the following new section be inserted on page 172, following line 12, using the text of the Senate bill:

"That Section 8 of the act to regulate commerce be amended so as to add at the end thereof the following:

"Provided, however, that no damages shall be awarded by the commission or by any court against a common carrier for a violation of Section 1 of the act to regulate commerce, approved February 4, 1887, as amended, as to the reasonableness of rates, except upon such proof of damages actually sustained by the party claiming the same as is required to sustain a recovery of damages based on a violation of Sections 2 or 3 of the act to regulate commerce, approved, February 4, 1887, as amended."

XVIII. State Rates

We again call attention to the fact that it is impossible to maintain a structure of interstate rates without corresponding changes in state rates, and that if the state rates are left to be finally determined by the states, it amounts to a surrender by the federal government of the power to regulate the rates on interstate commerce.

We likewise call attention to the fact that state rates may affect interstate commerce, not only by discrimination, but by a failure to bear a proportionate part of the burden of maintaining the instrumentality of interstate commerce, and to the further fact that promptness in the matter of adjusting state rates to a proper relationship with interstate rates, is absolutely essential to successful operation of the railroads and to justice between shippers in interstate and in state commerce, respectively.

We, accordingly, urge that a larger measure of control of state rates than that in either bill shall be agreed on, and that where a state rate is drawn in question before the Interstate Commerce Commission, the power of suspension of the state rate shall be conferred upon that commission.

XIX. Rates on Ordinary Live Stock to Include Compensation for the Service of Delivery and Unloading

Senate bill, page 179, lines 8 to 16.

The purpose of this paragraph is doubtless to do away with what is known as the "Chicago Live Stock \$2.00 Switching Charge."

This charge was in litigation for many years, and the charge was finally upheld by the Supreme Court of the United States.

The paragraph which has been added provides that through rates for transportation of ordinary live stock destined to be received at public stock yards, shall include the service of unloading and delivery of inbound shipments into suitable pens, and the receipt and loading of outbound shipments.

The railroads entering Chicago do not own the terminal railways on which the live stock is delivered to the Chicago stock yards, nor do they own the stockyards. The duty of

the incoming carrier should end with the delivery to the connecting carrier at the terminal.

Notwithstanding the fact that the incoming carrier does not own the stock yards and should only be charged with the duty of delivering to its connection, the paragraph seems to go to the extent of requiring the stock to be unloaded into suitable pens. Persons in practical touch with transportation, advise that this would be almost impossible of performance, aside from the matter of additional cost.

The impression seems to have been, when this provision was inserted, that it was the practice of the railroad companies to separate their charges, and when a shipper of live stock asks for the rate from point of origin to the point of destination at the stock yards, he is given only the published tariff of the company, which does not include charges for terminal service, etc.

We are advised that this is a misconception, and that all terminal charges on live stock brought into Chicago for delivery at the stock yards are fully set forth in the tariffs, separate and apart from the transportation charge, so that there is no ground for a shipper's complaint that he is not informed of the amount of these terminal charges. Doubtless stock shippers are more familiar with the terminal charges than they are with the carriers' transportation charges.

We respectfully submit that this amendment is unnecessary, and ask its reconsideration.

XX. The Burden of Proof on Applications for Increase of Rates

Senate bill, page 181, line 16; House bill, page 68, line 7. The provision referred to is as follows:

"At any hearing involving a rate, fare, or charge increased after January 1, 1910, or of a rate, fare or charge sought to be increased after the passage of this act, the burden of proof to show that the increased rate, fare, or charge, or proposed increased rate, fare, or charge is just and reasonable shall be upon the common carrier, and the commission shall give to the hearing and decision of such questions preference over all other questions pending before it and decide the same as speedily as possible."

The provision, as it is stated in these bills, is, in reality, merely a repetition of the language contained in the present act to regulate commerce, and may have been included in these bills without reflection as to changed conditions which new seem to us to make it inappropriate.

If the proposed provision becomes law, the carriers must, after federal control terminates, assume the burden of proof to show that the rates initiated by the President of the United States during federal control are just and reasonable. Inasmuch as the President could not have been acting from any selfish financial interest, the law should assume that the rates which he established under the authority of law are just and reasonable, and the burden should not now be placed upon the carriers to vindicate the President's act.

Undoubtedly the effect of the provision, as it now stands, is to create the presumption that all rates in effect at the termination of federal control are unjust and unreasonable, whereas other provisions of both bills clearly indicate the recognition by the Congress of the necessity for further increases in rates. With this recognition it would be manifestly unjust to write into the bill which recognizes such necessity a presumption that all existing rates are unjust and unreasonable.

We respectfully suggest that it is now proper to make a new start and only to put upon the carriers the burden of showing that an increase of rates made after the roads are returned to private operation are just and reasonable. We, therefore, suggest that the clause be made to read:

"At any hearing involving a rate, fare, or charge increased after March 1, 1920, the burden of proof to show that the increased rate, fare, or charge, or proposed increased rate, fare, or charge, is just and reasonable, shall be put upon the carrier, and the commission shall give to hearings and decisions of such questions preference over all other questions pending before it, and decide the same as speedily as possible."

XXI. No Increase of Rates Except After Prior Approval by the Commission

Senate bill, p. 181, line 25.

A proviso was inserted on the floor of the Senate forbidding the filing, except after approval thereof had been secured from the commission, of any increased rate, fare, charge or classification.

It will be noted that this is entirely inconsistent with the provision of the bill providing for a suspension of rates by the commission. If the rates are to be approved before being filed, there is no need whatever for a suspension. If it may be suspended after being filed, there is no need for an approval prior to the filing of the same.

As an emergency matter, a provision similar to that now under discussion, was introduced into the law with the limitation that should expire on January 1, 1920.

Our understanding is that the Interstate Commerce Commission has never favored the clause. If our memory is not at fault, Commissioner Clark, in his testimony before the House committee, stated that no good had been accomplished by it, and that it was undesirable.

Its effect will be to seriously complicate the question of obtaining any increased rates. The commission must either go into an examination of every case before giving its approval, which would mean unending delay, or it must act in a perfunctory way and give its approval without consideration, the result in the last case being that the clause would have no value. We call attention to the fact that it is necessary to treat these carriers in a businesslike way if they are to be efficient in the service of the public. They may at any moment be loaded up with expenses which they cannot resist, and if this provision is enacted into law, the necessary revenues to make up for their increased expenses could only be secured after delay which could not be borne in any successful business. The success of these carriers is not a matter for them alone, or for them principally. Upon their success depends the entire commercial prosperity of the country, and it is, we submit, a short-sighted policy which would so surround them with restrictions and difficulties as to make it impossible for them to perform successfully their public duties. Nothing could embarrass them more than to so complicate the matter of obtaining adequate revenues as to make it impossible for them to survive.

We, therefore, earnestly suggest that the provision referred to be eliminated from the act.

XXII. Division of the Commission to Consider Questions of Valuation

House bill, page 72, line 14.

On this subject we have received a letter from the Honorable William G. Brantley, formerly a member of the House and now counsel for the President's Conference Committee on the Federal Valuation of the Railroads, which is as follows, and which we respectfully commend to the consideration of this committee:

"My attention has been called to Section 429 of this bill as it passed the House, which amends the law respecting the creation of divisions in the commission to read as follows:

"In all proceedings before any such division relating to the reasonableness of rates, or to alleged discrimina-

tions, or to the valuation of railroad property under Section 19a, not less than *three* members shall participate in the consideration and decision.'

"The present law as amended August 9, 1917, in the matter of the establishment of divisions by the Commission, provides that 'not less than *five* members shall participate in the consideration and decision' of all proceedings relating to the valuation of railway property under the Valuation act.

"The present law gives to the divisions all the power of the Commission. It provides that:

"The divisions shall have all the jurisdiction and powers now or then conferred by law upon the commission, and be subject to the same duties and obligations. Any order, decision, or report made or other action taken by any of said divisions in respect of any matters so assigned or referred to it shall have the same force and effect, and may be made, evidenced, and enforced in the same manner as if made, or taken by the commission, as provided in Section 169 hereof for rehearing cases subject to rehearing by the commission decided by the commission.'

"The language of the present law in the matter of rehearings by the commission requires all the formalities of obtaining a review of a decision by a division as is required for obtaining a review or rehearing of a decision by the full commission. The law provides that 'it shall be lawful for the commission in its *discretion* to grant such rehearing if sufficient reason therefor be made to appear.'

"It seems to me that the importance of the valuation work now being carried on by the commission is so great that the present law requiring at least five members of the commission to participate therein ought not to be changed.

"The truth is that in the determination of the rules and principles under which value is determined, the entire commission should participate and as a matter of fact, I think it is the purpose of the commission, and as well as their practice heretofore, so to do. I do not think, however, that it would be good legislation to enact a statute specifically conferring upon three members of the commission the vast powers and responsibilities created by the valuation act. I can see no reason or necessity for doing so in view of the past practice of the commission, and what is probably their present purpose.

"In my opinion the enactment of the legislation proposed would be in effect to minimize the importance of valuation by legislative declaration and would be an invitation to the commission to unload the responsibility of it upon three members.

"The Esch bill, as I understand it, proposes to increase the membership of the commission to 11, which proposed increase, it seems to me, is an additional reason for not changing the present law in respect to the number of commissioners who must pass upon valuation questions."

XXIII. Regulation of the Issue of Securities

Attention is called to paragraph 6 of the House bill, page 79, line 15, and to line 12, page 140 of the Senate bill.

These provisions authorize the carriers to issue securities and assume obligations or liabilities if approved as required by the bill, without securing approval otherwise than is specified in the act.

The object of this is to make the authority of the carriers complete to issue the securities and to adopt the plan of financing approved by the federal authority.

In order to make an issue of securities effective, it is frequently necessary to secure them by mortgages or otherwise, and there ought to be some authority in the federal act to

make this security complete in case there should be an obstacle in the state laws in the matter.

We would, therefore, suggest that paragraph 6 of the House bill, and the corresponding provision in the Senate bill be made to read somewhat as follows:

"The jurisdiction conferred upon the commission (if the house bill is adopted, or upon the board if the Senate view is adopted), by this section shall be exclusive and plenary, and a carrier may issue securities and assume obligations or liabilities in accordance with the provisions of this section without securing approval other than is specified herein, and may secure such securities, obligations or liabilities by mortgage, pledge or otherwise as it may deem appropriate. All such mortgages or other instruments securing any such securities or other obligations shall be filed for record with the Interstate Commerce Commission, and shall be recorded by the commission in a book kept by it for that purpose, which book shall be properly indexed and be open to public inspection. Such filing for record of mortgages or other instruments shall constitute notice of the contents thereof to all the world, and the lien created thereby shall take precedence of all judgments thereafter obtained, and of all conveyances, mortgages or other instruments of lien thereafter executed, and of all previously executed, except those which, prior to the passage of this act, have been duly registered or recorded in accordance with law."

XXIV. Oversight

If the Senate bill is adopted, attention is called to the fact that the word "commission" in line 6, page 140, of the Senate bill, page 88, of the comparative print, should, according to the context, be made to read "board." The board is the authority selected by the Senate to regulate the issue of securities and it is evident that in the Senate draft the word "commission" above mentioned was inserted by oversight.

XXV. Limitation on Passes in Favor of

Physicians, Surgeons and Attorneys

It is proposed by the House bill, lines 22, 23 and 24, page 41, to forbid a carrier to issue passes in favor of its surgeons, physicians and attorneys at law, except to those "who devote the principal part of their time to the carrier's service."

We respectfully ask that this limitation be removed.

The prejudice against issuing passes to persons of the classes here mentioned arose out of a belief on the part of the public that these passes were not used to secure for the carrier strictly professional services, but to influence public or political opinion. Any abuse of this nature has long since disappeared, and there is now no need for additional legislation to deal with the matter. If the pass is not to a bona fide physician, surgeon or attorney, it is prohibited by existing law.

The test should not be the devotion of the principal part of the employer's time to the service, but the bona fide of the employment. If the employment is not bona fide for the purpose of securing the professional service of the physician, surgeon or attorney, it should be and is now forbidden by law. If the issue of a pass enables the carrier to have available for its proper uses the services of physicians, and surgeons at various points on its line, and of attorneys to attend to its smaller matters, the public interest is in no wise injured, and the ability of the company to obtain competent assistants without excessive cost is promoted. If the carrier cannot issue passes to employees of this class who are engaged in general practice, the cost of the service will become a serious one and this cost must be reflected in increased operating expenses. Moreover, especially in the case of physicians and surgeons, it is most desirable in the case of accident at a point which cannot be foreseen to have the services of the most competent physicians and surgeons avail-

able, not only to the employees but to the public, and the ability to do this is greatly promoted by being able to offer a professional man of this class free transportation.

It has been found to work well and to be indispensable to the organization on moderate terms of cost of a professional staff available in all localities. It involves no unfortunate or burdensome consequence to the public. On the contrary, it has relieved the public of a large amount of expense, as the costs of this service, if not provided for in this way, would have gone to increase the operating expenses.

It is respectfully submitted that, if the present law must be amended at all, the evil could be reached by inserting before the word "surgeons" the word "bona-fide," and by striking out the words "who devote the principal part of their time to its service."

XXVI. Long and Short Haul Clause

Page 65, lines 8 and 9.

Page 166 of the Senate bill.

Attention is called to the provision as it stands in the Senate bill, which forbids the commission, in giving relief from the rigid requirements of the section, to permit the establishment of any charge to or from the more distant points "that is not fairly compensatory for the service performed."

The rail carriers do not desire, and should not be authorized, to make a rate upon any commodity the transportation of which does not yield the cost of handling—commonly expressed as the out of pocket cost—and something more; in other words, that does not make some contribution to the expense of the carrier which would otherwise be thrown on other business. They, however, do desire and should be permitted to make a rate the equivalent of the price of transportation by water when the earnings desired from the rail service will pay for the cost of handling and contribute something towards meeting the general expenses.

Whether the commission will authorize relief from the long and short haul provision under the wording now in the bill will depend upon the construction they place on the words "fairly compensatory."

The carriers should not be required to take the chances arising out of such an uncertainty of construction.

It is most important, as Congress has always recognized, to have some relief from the rigid provisions of the long and short haul clause, and the provision as it now stands may make it impossible to obtain such relief and may destroy the elasticity which the commerce of the country requires in respect to this matter. The danger of the carrier charging less than its "out of pocket" cost with an addition of something more as a contribution to the general expense is, of course, remote, but could be absolutely guarded against by making the proviso read as follows:

"but in exercising the authority conferred upon it in this proviso the commission shall not permit the establishment of any charge to or from the more distant points that does not yield some revenue in excess of the actual cost of the transportation of the commodity upon which the charge is made."

Unless the time-honored policy of Congress is now to be reversed and the uniform recommendation of the commission is now to be disregarded, the proposal of the Senate bill should be modified as we have above suggested.

XXVII. Common Directors

House bill, p. 82, line 1; Senate bill, p. 142, line 13.

It is the policy of both bills to promote proper consolidations. There are, at present, many useful systems made up of independently incorporated companies held and operated under a common stock ownership. It does not seem necessary in order to carry out the policy of these bills, that common directors in such companies should be forbidden, or that

it should be necessary to go to the Interstate Commerce Commission for its approval. To authorize common directors in such cases would avoid a multitude of applications to the commission, save much of the time of that hard-worked body, and would be announcing merely a conclusion which would be the inevitable consequence of an application to the commission itself.

It is therefore urged that after the word "thereby" in line 7, on page 82 of the House bill, and after the word "thereby" in line 19, on page 143 of the Senate bill, there be inserted the following:

"Provided, That nothing herein contained shall be held or construed to prevent the holding of the position of officer or director of more than one carrier in the case of a subsidiary, or subsidiaries, controlled through stock ownership, lease or otherwise, or in which subsidiary, or subsidiaries, such carrier has an equal stock interest, or in the case of a common carrier and another company, or other companies, controlled by a common stock ownership."

XXVIII. Automatic Train Stops

House bill, p. 83, line 23.

Perhaps there is no man in the country better qualified to give an opinion on the practicability of installing automatic train stops than General S. M. Felton.

He states that there has been no automatic control device yet developed that meets the specifications of the Engineer Section of the American Railroad Association, and he doubts if there ever will be. He declares that "It is an utterly impracticable scheme, it removes the responsibility of handling the train from the enginemen, and we would have much more serious accidents than we now have. An engineer would not have to be awake, alert and on the job all the time, because he would soon depend on the automatic device to protect him."

We commend to the consideration of the conference committee this opinion of General Felton, and request that the proposed provision shall be eliminated from the bill.

The foregoing suggestions have been prepared under circumstances which render them necessarily incomplete, and I respectfully request permission to file a supplemental memorandum for the consideration of the conference committee.

Accounting Work Transferred to Director General's Office

CHARLES A. PROUTY has resigned as director of the Division of Accounting of the Railroad Administration and has been appointed an advisory member of the director general's staff, in which capacity he will give attention to the principal accounting problems of the Railroad Administration and particularly to the accounting features of maintenance questions which arise under the provisions of the standard compensation contracts. The work of the Division of Accounting is transferred to the office of the director general and will be in charge of G. H. Parker, now financial assistant to the director general, who will have the title of comptroller. Correspondence of the character heretofore addressed to the Division of Accounting should be addressed to the comptroller. It is understood that this is a forecast of the form of organization which will be maintained to carry out the work which will remain after the relinquishment of control of the railroads by the Railroad Administration, which as such will cease to exist on February 29. Director General Hines has been authorized by the President's proclamation to take charge of the settlement of affairs and it is understood that other appointments may be made to his staff for this purpose.

General News Department

Glenn E. Plumb, counsel for fourteen railway labor organizations, has prepared and privately circulated an outline of a plan for extending the principles of his Plumb plan of so-called tripartite control to all industries except purely individualistic enterprises such as farming.

Five killed and 139 injured, is the record of the derailment at Vincent, Cal., in October, reported in the *Railway Age* No. 22, dated November 28, the persons killed being one passenger, two trainmen and two trespassers. An officer of the road advises that none of the passengers injured died from their injuries. The statement that five were fatally injured is an error.

The valuation of the railroads being made by the Interstate Commerce Commission will be completed within two years, Charles A. Prouty, director of the Bureau of Valuation of the Interstate Commerce Commission, predicted in testifying before the appropriations committee of the House of Representatives in support of the commission's request for an additional appropriation of \$500,000 for carrying on the work.

The National Transportation Conference at its meeting in Washington, Wednesday, to consider its position on railroad legislation decided to support an amendment to the Cummins bill providing for a rate return of not less than 5½ per cent instead of as nearly as may be to that figure and to support a provision allowing the railroads to retain one half of the excess earnings and that calculations of net return be made by systems instead of individual companies.

A valuable record of the construction of the Quebec bridge has been prepared by the Engineering Institute of Canada, and published in Volume 32 (Part I and Part II) of its transactions. The first part contains the text matter and the second consists of a collection of drawings. The work includes papers presented before the institute by various engineers and constructors connected with the building of this monumental structure, and other material. There are contributions by C. N. Monsarrat, G. H. Dugan, George F. Porter, Phelps Johnson and A. L. Harkness; also a bibliography.

The State of Rhode Island, by act of legislature, proposes to establish "Rhode Island Standard Time," which for five months (not seven) in the summer will be one hour faster than Eastern Standard. At least, this is the substance of a bill, proposed by the Providence Chamber of Commerce and introduced in the legislature at its opening session this week. The width of Rhode Island, from east to west, at the widest part of the State, is about 35 miles, so that the proposed standard will be free from some of the worries of some standards; if it is right at the center of the state it cannot be more than about 1½ minutes out of the way in the remotest part of the territory which it governs.

The directors of the Indianapolis Chamber of Commerce, by unanimous vote, have telegraphed the Indiana senators and representatives in Washington calling for some measure to be passed before the railroads are returned to their owners, providing for (1) the extension of government rental until revenues are adjusted to cost, (2) the creation of a revolving fund for loans if the carriers cannot borrow from the investing public, (3) the refunding of carriers' debts to government on at least a ten-year plan, (4) a simple rule that rates shall be sanctioned to yield sufficient revenue to meet expenses of operation, including labor, and a fair return on the property held or used for the public interest and supporting a basis of credit for new capital which carriers must get from the investing public to meet the transportation requirements of the country.

The railway brotherhoods and other labor organizations, having received no encouragement from the Railroad Administration on their latest requests for increased wages, are working on a plan for reducing the cost of living through their own efforts by co-operative buying, production and distribution. Announcement was made in Washington on Wednesday last of the formation of the All-American Farmer-Labor Co-operative Commission, of which the officers of the railway unions are the officers to carry out the plan, and B. M. Jewell has issued a statement indicating the conclusion that increases in wages will not solve the problem, because they result in a vicious circle of increasing prices. The plans are to be perfected at another conference in Chicago, February 12.

Purchase by Employees of Unclaimed Freight

Circular No. 9 issued by the Claims and Property Section of the Division of Law, forbids officers and employees of railroads under federal control to purchase, directly or indirectly, over, damaged, refused, or unclaimed freight from any representative or agent authorized to dispose of such freight by sale.

Accounting Circular No. 120

Accounting Circulars Nos. 101, 109, and 115 require the accumulation of certain specific information for the year 1918 with respect to maintenance of property of the railroad companies taken over, in order that a comparison of the maintenance expenses of the test period with those of the period of federal operation may be made possible. Accounting Circular No. 120, issued by C. A. Prouty, director, on December 9, directs that similar information be compiled for the calendar year 1919, so that complete returns may be made for that year in the same manner as for 1918.

A Correction

Clement F. Street has called attention to a misstatement in the report of the discussion of the paper "Scientific Development of the Steam Locomotive," which appeared on page 1202 of the *Railway Age* of December 19. Mr. Street writes:

"What I did say, was that Mr. Muhlfeld did not submit any data to support the statements which he made regarding the cost of electric operation and without some data in support of his statement, I would question them. You say that I said, that the fuel performance secured on stoker-fired engines did not equal the results obtained by the best fireman. This is incorrect. The statement which I made was that stokers would, as regards fuel economy, not give any better results than obtained by an expert fireman, but would use 25 to 30 per cent less coal than the average fireman."

New York Railroad Club Dinner

The New York Railroad Club has introduced an entirely new feature in its program this year, and will hold a subscription dinner at the Hotel Astor on Thursday evening, January 15 at 6:30.

Herbert H. Vreeland will act as toastmaster. Addresses will be made by Honorable E. C. Stokes, ex-governor of New Jersey, and Honorable Job E. Hedges, of New York.

A special musical program has been provided under the direction of Miss "Bobby" Besler, daughter of the president of the Central Railroad of New Jersey, who spent a very considerable time during the war in Y. M. C. A. work among the American Expeditionary Forces.

Tables may be reserved for parties of eight or ten, and all applications must be in the hands of D. W. Pye, Tuco Products Company, 30 Church street, New York, N. Y., by January 12.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST, 1919

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			General.	Total.	Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) last year.
		Freight.	Passenger.	Total (Inc. misc.)	Way and structures.	Traffic.	Trans- portation.							
Alabama & Vicksburg.....	141	\$147,127	\$76,222	\$243,608	\$41,245	\$2,715	\$104,556	\$8,866	\$191,547	78.62	\$52,061	\$11,417	\$40,623	-\$3,702
Ala. Great Southern.....	312	548,120	233,231	836,565	162,361	12,693	309,223	19,429	683,938	81.25	152,638	23,863	128,775	-143,373
Ann Arbor.....	301	301,740	82,460	404,439	37,714	3,632	183,705	9,210	284,089	70.24	120,349	16,700	103,649	35,124
Arizona Eastern.....	377	197,714	36,439	254,780	59,942	1,727	109,499	1,439	218,742	85.85	36,038	16,282	19,756	-67,317
Atch., Top. & Santa Fe.....	8,665	10,785,186	4,025,990	15,673,078	1,790,631	135,109	5,303,359	242,004	10,496,363	66.97	5,176,715	573,819	4,600,926	-842,729
Atlanta & W. P.....	93	88,190	120,009	228,577	25,023	3,830	89,118	6,454	166,762	72.95	61,815	8,500	53,312	-7,831
Atlanta, Birm. & Atl.....	639	266,716	103,438	469,154	39,749	7,443	187,964	12,495	266,460	65.54	139,024	125,003	155,093	155,093
Atlantic Coast Line.....	4,874	2,349,110	1,401,055	4,050,171	774,034	62,080	2,073,521	108,838	3,867,417	95.47	183,294	225,000	43,706	-1,698,533
Atlantic City.....	177	87,892	613,657	701,549	59,319	3,443	263,215	1,007	377,699	52.66	339,481	12,000	327,481	-72,676
Balt. & Ohio.....	5,151	13,487,516	3,128,447	17,615,963	2,624,376	158,430	6,859,052	357,066	14,873,174	83.45	2,948,294	369,309	2,577,985	2,477,421
Balt. & Ohio Chicago Term.....	90	194,224	1	194,224	31,706	1,178	127,286	7,398	197,568	101.72	-3,344	26,542	-29,893	105,662
Balt., Ches. & Atl.....	87	130,135	88,516	228,651	9,567	1,141	92,514	3,446	129,985	57.14	97,484	4,015	93,469	48,882
Bangor & Aroostook.....	632	237,637	83,298	320,935	341,115	3,774	136,325	10,684	358,044	104.96	16,929	21,000	37,941	-110,446
Beaumont, Sour Lake & West.....	118	94,311	28,779	123,090	30,095	2,449	42,622	4,658	95,054	74.21	33,032	2,700	30,254	4,961
Belt Ry. of Chgo.....	31	.....	.....	.....	33,232	344	179,047	9,248	268,141	71.33	107,734	15,682	92,052	49,108
Bessemer & Lake Erie.....	217	1,421,926	65,255	1,519,337	186,343	9,908	355,114	19,416	971,117	63.91	548,220	14,500	533,708	-255,768
Birmingham & Gulf.....	37	88,229	2,404	90,633	36,437	1,207	23,871	4,283	115,961	123.73	-22,243	7,802	-30,045	-182,419
Birmingham Southern.....	29	35,252	.....	35,252	3,844	755	26,379	3,344	39,261	92.03	3,399	1,999	1,401	-59,106
Boston & Maine.....	2,558	3,867,137	2,271,076	6,138,213	873,765	40,548	3,056,908	166,982	5,108,731	75.72	1,637,770	180,086	1,457,684	-984,766
Buffalo & Susq.....	296	220,375	6,929	227,304	40,604	1,932	73,283	8,059	242,294	99.32	1,641	3,250	1,609	-30,066
Bull., Rochester & Pitts.....	589	1,149,471	169,308	1,377,378	220,541	15,555	567,310	32,769	1,255,560	91.15	121,818	27,000	94,807	-302,316
Canadian Pac. Lines in Maine.....	233	107,459	41,603	149,062	67,944	2,552	66,655	3,012	168,249	105.72	-9,113	11,000	-20,113	8,337
Carolina, Clinchfield & Ohio.....	282	462,293	44,667	506,960	77,131	4,428	156,290	16,863	352,612	68.71	160,558	16,300	144,258	18,426
Central of Georgia.....	1,918	1,054,181	638,314	1,672,495	307,934	36,331	732,177	56,190	1,482,061	80.23	365,176	65,580	297,968	-192,099
Central New England.....	301	481,331	25,737	507,068	147,056	3,024	235,513	13,945	497,336	94.16	30,810	16,000	14,810	-111,911
Cent. R. of New Jersey.....	685	2,940,756	1,009,619	3,950,375	544,719	26,225	1,903,590	82,412	3,494,763	82.91	719,879	157,386	562,492	-1,209,803
Cent. Vermont R.....	411	355,585	118,924	474,509	143,970	8,634	298,395	17,663	578,949	111.85	-61,380	17,400	-78,780	-69,651
Charleston & W. Carolina.....	342	161,883	62,227	224,110	54,188	5,172	89,781	5,076	209,438	89.57	24,338	8,500	15,838	-20,192
Ches. & Ohio.....	2,509	4,123,358	1,241,697	5,365,055	1,142,564	36,420	2,129,580	113,162	4,481,652	78.85	1,201,866	158,400	1,042,886	-1,853,268
Chgo. & Alton.....	1,050	1,205,359	645,784	1,851,143	387,194	24,031	854,539	45,747	1,780,931	90.18	193,875	113,920	79,843	-781,293
Chgo. & Eastern Illinois.....	1,131	1,614,712	371,099	2,224,253	362,847	24,497	490,184	45,690	1,783,657	79.45	461,086	79,500	381,586	391,030
Chgo. & Erie.....	269	727,216	124,125	851,341	118,868	11,393	426,482	28,746	678,052	74.52	231,899	27,678	204,221	1,112
Chgo. & N. W.....	8,090	7,217,136	3,514,750	10,731,896	1,923,247	81,026	5,083,856	275,177	9,643,045	82.16	2,993,293	475,000	1,517,976	-535,215
Chgo., Burl. & Quincy.....	9,371	10,259,266	3,869,397	15,128,663	1,975,220	2,864,045	5,002,613	303,904	10,394,861	68.55	4,768,766	466,525	4,300,940	-92,186
Chgo., Great Western.....	1,496	1,487,402	610,612	2,098,014	361,689	26,885	787,672	44,903	1,646,417	73.68	587,901	34,772	553,469	-6,023
Chgo., Ind. & Louisville.....	657	786,727	291,137	1,077,864	113,783	14,409	467,621	26,023	891,039	76.11	279,565	48,140	230,799	-57,736
Chgo., Junction.....	12	.....	.....	.....	35,214	68	21,921	5,311	303,326	85.63	50,888	5,972	44,837	125,445
Chgo., Milw. & St. Paul.....	10,648	9,107,755	3,058,224	13,414,257	2,657,742	68,654	5,652,038	305,094	11,607,865	76.53	1,806,392	539,252	1,263,209	-1,807,052
Chgo., Peoria & St. Louis.....	247	93,840	31,899	125,739	32,429	1,966	92,134	7,859	188,307	140.06	-53,866	6,100	-59,966	-7,687
Chgo., Rock Island & Gulf.....	474	290,347	99,531	399,878	78,131	6,039	163,228	12,076	322,467	77.98	91,016	13,155	77,773	-9,312
Chgo., Rock Island & Pacific.....	7,594	6,311,430	3,218,719	10,088,973	1,633,847	10,539	4,015,105	193,990	7,706,827	76.38	2,382,146	356,720	2,024,957	1,323,282
Chgo., St. Paul, Minn. & Omaha.....	1,749	1,351,703	742,438	2,231,433	402,341	318,581	1,051,382	61,987	1,870,915	83.84	360,519	105,196	255,139	-31,017
Chgo., Terra Haute & S. E.....	374	360,517	26,043	397,926	61,863	2,192	144,131	8,863	352,913	88.68	45,013	14,500	30,513	-143,528
Cinc., Ind. & Western.....	321	231,543	66,313	321,655	48,045	5,093	138,399	13,468	286,690	89.12	34,965	10,243	24,722	86,067
Cinc., Lebanon & Nor.....	76	76,132	10,434	86,566	23,914	1,409	59,593	7,773	112,562	111.48	-11,593	4,404	-15,997	-26,148
Cinc., N. O. & Texas Pac.....	337	800,090	331,282	1,131,372	240,841	21,645	573,355	53,681	1,217,677	101.71	-20,541	37,000	-57,579	-492,907
Cinc. Northern.....	251	205,889	28,618	234,507	27,389	4,574	89,291	3,619	165,000	70.71	79,555	13,400	66,351	49,628
Clev., Cinc., Chgo. & St. Louis.....	2,395	4,722,336	1,832,971	7,037,217	789,384	71,042	2,627,974	92,238	4,730,599	97.32	2,306,316	166,000	2,139,159	-1,191,235
Colorado & Southern.....	1,099	809,673	312,440	1,122,113	240,709	7,352	418,564	33,695	952,294	79.91	239,381	47,000	191,395	-163,814
Colo. & Wyoming.....	41	22,862	917	23,779	14,465	43	39,503	3,897	74,998	81.62	16,882	4,000	12,882	-13,072
Copper Range.....	141	64,932	13,288	78,220	29,961	1,680	45,197	2,525	98,263	114.80	12,668	6,992	19,660	-70,299
Cumberland Valley.....	163	408,848	92,448	501,296	88,742	6,291	164,659	9,995	370,114	69.14	165,129	7,382	157,748	-195,805
Delaware & Hudson.....	875	2,731,462	464,754	3,366,810	361,780	16,884	1,341,793	101,895	2,641,669	76.60	719,142	60,000	659,143	-358,229
Delaware, Lack. & Western.....	955	4,307,356	1,327,837	6,256,837	761,540	11,441	2,618,092	113,253	4,789,195	76.54	1,467,643	318,427	1,143,388	-470,927
Denver & Rio Grande.....	2,593	2,630,784	870,331	3,501,115	158,095	18,768	976,676	69,923	2,198,800	70.79	906,954	115,000	791,216	645,231
Denver & Salt Lake.....	255	212,935	15,202	228,137	79,533	1,005	133,572	5,557	285,345	96.63	9,948	9,000	914	18,100
Detroit & Mackinac.....	381	103,966												

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST, 1919—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Net from railway operation.	Operating income (or loss), last year.	Increase (or decrease) comp. with last year.
		Freight.	Passenger.	Total.	Trans- portation.	General.	Total.			
Ft. Worth & Denver City.....	454	\$584,296	\$394,954	\$1,012,623	\$4,537	\$62,127	\$66,664	\$36,637	\$358,565	\$122,927
Ft. Worth & Rio Grande.....	235	83,845	60,631	162,046	1,325	63,408	64,733	113,721	48,326	28,558
Galv., Harris, & San Ant.....	1,381	1,366,544	515,242	1,955,843	16,592	708,437	725,029	1,486,221	52,892	415,877
Galv. Wharf.....	13	.....	72,539	72,539	33,481	27,884	61,365	11,471	12,500	-7,272
Georgia R. R.....	328	221,177	203,176	424,353	10,984	225,061	236,045	8,931	48,073	-189,374
Ga. & Florida.....	348	51,003	26,025	77,028	1,868	52,439	54,307	108,233	4,200	-30,890
Ga. So. & Fla.....	402	231,437	103,332	334,769	7,443	132,439	139,882	125,446	35,733	35,024
Grand Rapids & Ind.....	569	501,812	305,424	807,236	11,728	355,179	366,907	235,150	213,195	43,840
Grand Trunk Lines in N. E.....	1,001	1,517,476	60,246	1,577,722	2,063	171,512	173,575	141,313	14,500	-24,187
Grand Trunk Western Lines.....	1,001	1,517,476	60,246	1,577,722	2,063	171,512	173,575	141,313	14,500	-24,187
Great Northern.....	8,172	5,803,736	2,044,274	7,848,010	52,814	3,330,042	3,382,856	636,261	50,315	912,540
Green Bay & Western.....	252	67,910	18,548	86,458	1,262	37,289	38,551	3,688	1,820,610	192,990
Gulf & Ship Island.....	307	150,589	59,315	209,904	4,116	84,566	88,682	29,460	11,408	-19,588
Gulf, Colo., & Santa Fe.....	1,937	1,439,765	573,128	2,012,893	22,522	862,552	885,074	1,770,378	18,049	-26,640
Gulf, Mobile & Nor.....	424	185,497	58,281	243,778	7,211	105,989	113,200	356,232	28,877	2,647
Hocking Valley.....	350	1,146,421	123,711	1,270,132	6,656	392,842	400,498	465,346	50,500	-184,620
Houston, C. & W. Texas.....	247	514,185	259,850	774,035	6,628	320,345	337,000	639,734	34,459	337,690
Houston, C. & W. Texas.....	190	138,721	59,960	198,681	1,107	90,133	91,235	150,883	6,249	49,163
Illinois Central.....	4,799	6,739,549	2,307,507	9,047,056	86,229	3,702,886	3,789,115	1,420,725	980,401	-917,453
Indiana Harbor Belt.....	116	.....	.....	.....	1,592	417,838	419,430	13,495	2,534	-12,103
International & Great Northern.....	1,159	746,966	334,475	1,081,441	14,339	295,718	310,057	125,169	23,500	-148,695
Kan. City, Mex. & Orient.....	272	118,290	22,499	140,789	2,748	70,935	73,683	12,061	6,250	-29,377
Kan. City, Mex. & Orient of Texas.....	465	85,066	22,215	107,281	2,748	70,935	73,683	12,061	6,250	-29,377
Kansas City Southern.....	774	975,013	243,221	1,218,234	2,132	569,385	571,517	303,575	5,000	-44,699
Kansas City Terminal.....	27	.....	.....	.....	.....	42,193	42,193	38,211	61,250	66,950
Kanawha & Michigan.....	176	351,997	56,807	408,804	1,968	135,198	148,166	135,886	13,017	31,641
Lake Erie & West.....	902	805,001	182,152	987,153	12,608	354,404	367,012	59,070	40,111	-176,158
Lake Sup. & Ishpeming.....	34	117,540	265	117,805	206	23,885	24,091	62,410	17,900	17,766
Lehigh & Hudson River.....	96	238,179	5,750	243,929	1,080	89,614	90,694	68,872	3,872	-152,800
Lehigh & N. E.....	234	432,139	1,627	433,766	1,983	131,608	133,591	176,328	5,400	38,193
Lehigh Valley.....	1,435	852,701	747,946	1,600,647	41,687	246,657	258,344	194,849	182,570	-124,389
Lone Island.....	308	632,112	1,779,208	2,411,320	11,371	1,054,662	1,066,033	831,223	71,928	-604,930
Los Angeles & Salt Lake.....	1,168	870,808	378,692	1,249,500	18,669	433,982	452,651	90,743	94,428	-322,293
Louisiana & Arkansas.....	302	106,550	48,220	154,770	3,486	66,511	71,997	181,761	38,963	86,093
Louisiana Ry. & Nav. Co.....	349	250,366	42,801	293,167	3,991	96,611	100,602	219,369	11,216	-32,863
Louisiana Western.....	207	187,660	117,441	305,101	4,571	94,099	98,670	84,894	14,000	-70,894
Louisville & Nash.....	5,013	6,008,508	2,307,658	8,316,166	124,707	3,616,861	3,741,568	2,464,887	65,936	-165,532
Louisville, Hend. & St. L.....	199	146,453	74,890	221,343	4,305	84,913	89,218	76,032	1,765,924	-2,028,685
Maine Cent.....	1,216	870,210	602,993	1,473,203	14,179	759,155	773,334	179,915	4,000	51,713
Md., Del. & Va.....	82	73,790	87,330	161,120	522	86,133	86,655	47,148	104,136	-194,484
Midland Valley.....	1,861	4,765,223	2,082,379	6,847,602	64,870	2,389,139	2,453,909	1,027,842	45,254	13,490
Minneapolis & St. Louis.....	388	244,706	92,288	336,994	3,002	121,315	124,317	79,286	6,787	50,706
Minneapolis, St. Paul & S. S. Marie.....	1,646	853,053	259,385	1,112,438	9,970	524,665	534,635	212,316	50,184	354,338
Mineral Range.....	101	53,656	361	54,017	29,208	1,390,011	1,419,219	1,027,842	251,325	776,225
Minn. & Int.....	194	52,349	28,353	80,702	556	41,726	42,282	59,222	3,500	-36,045
Miss. Cent.....	164	48,819	33,248	82,067	1,369	35,117	36,486	5,685	1,076	18,539
Mo. & North Arkansas.....	365	274,998	64,206	339,204	2,782	65,949	68,731	105,17	2,800	-13,990
Mo., Kans. & Texas.....	1,713	2,287,326	753,673	3,041,000	32,640	990,506	1,022,506	934,150	842,962	676,035
Mo., Kans. & Texas of Texas.....	1,796	1,349,900	797,129	2,147,029	25,057	1,102,024	1,211,708	159,260	110,746	-53,904
Mo., Okla. & Gulf.....	332	110,140	22,815	132,955	2,263	65,330	67,593	49,330	8,522	-31,747
Mo., Pacific.....	7,301	6,015,753	2,060,978	8,076,731	98,019	3,303,812	3,384,831	1,741,430	263,015	-677,325
Mobile & Ohio.....	997	1,036,531	224,532	1,261,063	23,039	594,889	617,928	132,478	45,000	87,266
Monongahela Connecting.....	108	389,117	21,430	410,547	1,217	196,984	200,191	219,185	5,000	214,185
Montour.....	54	140,278	1,214	141,492	1,016	31,339	32,355	10,155	1,482	5,153
Morgan, La. & Texas R. R.....	400	406,065	187,114	593,179	8,515	263,313	269,828	120,835	29,796	-46,522
Nash., Chatt. & St. Louis.....	1,247	1,174,964	504,881	1,679,845	39,405	719,188	738,593	300,273	50,000	-357,399
Nevada Northern.....	168	13,618	8,098	21,716	886	42,330	43,216	22,223	45,035	-190,852
Newburgh & South Shore.....	7	.....	.....	.....	.....	45,154	45,154	60,635	4,041	-118,829
New Orleans & N. E.....	195	348,386	140,778	489,164	8,249	399,072	407,321	150,172	28,357	-6,147
New Orleans Great Nor.....	284	163,645	55,720	219,365	2,604	80,930	83,534	61,177	9,000	-25,832
New Orleans, Texas & Mex.....	191	123,047	54,780	177,827	3,904	48,370	52,274	40,362	10,000	39,089
New York Central.....	6,075	17,266,725	9,099,773	26,366,498	230,787	10,529,060	11,288,847	9,103,197	1,042,649	824,554
New York, Chicago & St. L.....	5,74	1,785,865	158,017	1,943,882	27,394	882,099	962,493	429,219	50,000	379,127
N. Y., H. & Hartford.....	1,965	4,059,170	4,241,563	8,300,733	47,499	4,267,211	4,314,710	212,842	268,000	-1,530,776
N. Y., Ontario & Western.....	569	650,396	637,746	1,288,142	8,788	862,579	871,367	596,541	27,000	199,105
N. Y., Susq. & Norfolk.....	121	613,365	810,386	1,423,751	9,183	638,680	647,863	171,706	16,520	-57,807
N. Y., Susq. & Western.....	135	270,306	69,139	339,445	3,314	181,229	194,553	74,781	37,111	-80,194
Norfolk & Western.....	2,088	5,573,336	1,107,473	6,680,809	35,655	2,593,126	2,638,751	1,668,598	260,000	1,408,457

The Brotherhood of Railroad Patrolmen

An international union of railroad policemen of the United States and Canada, under the above name, has been formed at Chicago. Charles E. Copeland is grand-president and W. L. Kahl is grand-secretary and treasurer of the brotherhood, with headquarters at 822 W. Ohio street, Chicago. The Chicago local is No. 1 and its territory covers the Chicago district.

The enrolment is composed of 900 railroad patrolmen and watchmen.

Signal Engineers—New York Section

The New York Sectional Committee of the Signal Division of the American Railroad Association will hold a meeting at Hotel McAlpin, 34th street, New York City, on the evening of January 22, beginning at 8 o'clock. Fred W. Bender, chairman of the committee in charge, announces that a paper on track circuits will be read, and he desires members to come prepared to give the paper full discussion; and to bring any friends who are interested in the subject. The meeting will be held in the grand ballroom, on the 14th floor.

N. P. W. D. Association

The name of the organization created to promote a National Department of Public Works—the Engineers', Architects' and Constructors' Conference on National Public Works—has been changed to the National Public Works Department Association. This organization has issued a call for a convention to be held in Washington on January 13 and 14, for the purpose of broadening the scope of the campaign, to adopt plans and policies for the subsequent legislative campaigns and by intensive work in Congress to focus attention on the situation. Invitations have been sent to the engineering organizations which were represented in the Chicago conference last April, to other technical organizations and to the industrial interests of the country, including the American Iron & Steel Institute, the National Railway Appliances Association, the Railway Car Manufacturers' Association, and the Railway Supply Manufacturers' Association. In response to a resolution supported by a brief presented by Engineering Council, the Board of Directors of the Chamber of Commerce has authorized the appointment of a special committee of the Chamber to investigate and report on the project for a department of public works.

Western Association of Short Line Railroads

Delegates to the annual meeting of the Western Association of Short Line Railroads, which was held at San Francisco, Cal., on December 4, took measures to affiliate with the American Short Line Railroads Association and elected the following as members of the Board of Directors: George W. Scott, president, Yreka Railroad Company; S. H. Smith, traffic manager, Sierra Railway Company of California; D. M. Swobe, vice-president and traffic manager, McCloud River Railroad Company; R. K. Minson, general freight and passenger agent, Arizona & New Mexico Railway Company; L. G. Cannon, vice-president and general manager, Nevada Northern Railway Company; E. M. Heigho, receiver, Pacific & Idaho Northern Railway Company; Guy W. Talbot, president, Walla Walla Valley Railway Company; A. M. Ardery, vice-president and general manager, Virginia & Truckee Railway; M. W. Cooley, general manager, Uintah Railway, and Clarence M. Oddie, general counsel and secretary of the Association.

Immediately after the annual meeting of the Association the new board of directors met and elected the following officers for the ensuing year: President, D. M. Swobe; first vice-president, L. G. Cannon; second vice-president, George F. Detrick; general counsel and secretary, Clarence M. Oddie, San Francisco, Cal.

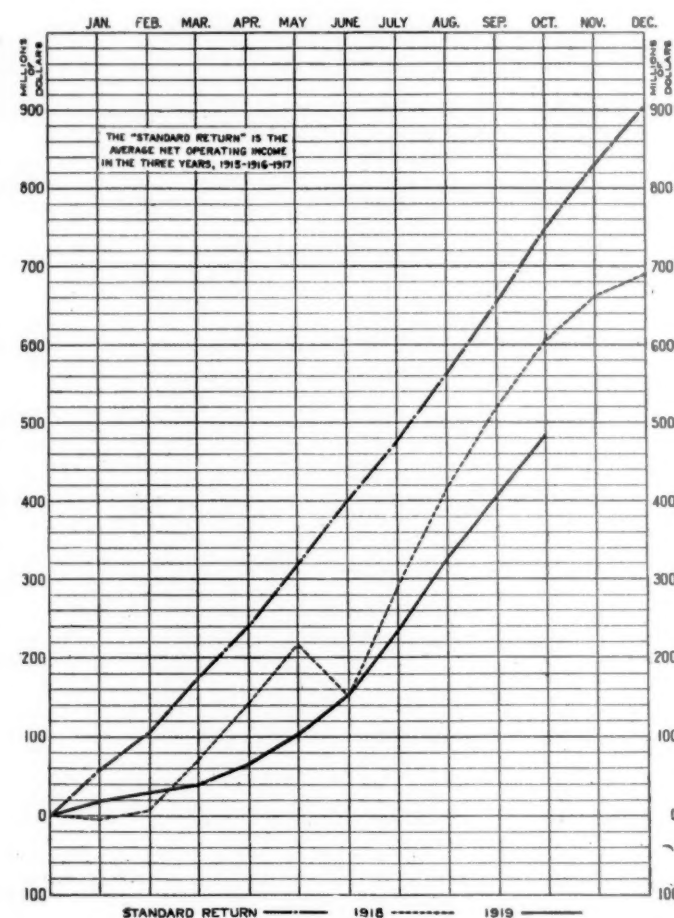
The board also elected Mr. Oddie and Mr. Detrick as the representatives of the Western Association of Short Line Railroads to serve on the executive board of the American Short Line Railroad Association at Washington.

The affiliation of the two associations was brought about in order that the American Association may be able to speak

for all of the short lines in national matters and in order that the Western Association may be enabled to represent both the members of the American Association and its own members in matters arising in Inter-mountain States and on the Pacific Coast. By this arrangement nearly 450 railroads can act together.

Net Operating Income

The chart made by the Bureau of Railway Economics shows the net operating income of the Class 1 Roads in 1919, compared with the average in the test period (1915-1916-1917)



Net Operating Income, Cumulated by Months, 1918 and 1919, Compared with Standard Return, Class I, Railways of United States

on which government rental is based. The table gives the figures on which the chart is based.

NET OPERATING INCOME OF RAILROADS (CLASS I) IN 1919, COMPARED WITH TEST PERIOD (JUNE 30, 1914—JUNE 30, 1917.)

Month	Standard Return	Earnings in 1919
January	\$56,613,000	\$18,783,702
February	47,934,000	10,106,268
March	68,251,000	10,842,608
April	67,289,000	26,115,214
May	77,385,000	39,462,367
June	82,550,000	52,270,702
July	75,341,000	77,176,933
August	86,860,000	92,396,636
September	91,273,000	77,763,023
October	94,333,000	76,397,213
November	83,536,000	.....
December	73,282,000	.....

Railroad Thieves Punished

A resume of the activities of the Secret Service and Police Section of the Railroad Administration in dealing with thefts for the eight months of 1919 up to September 1, was made public recently. The record for August is typical. During that month 1,514 arrests were made for theft and 607 convictions were obtained, carrying with them total sentences

of 40 years in the penitentiary, 111 years in jails and reformatories and \$12,000 in fines. In eight months property valued at \$149,000 was stolen, of which \$133,554 worth was recovered. The following figures show the principal totals for the eight months:

Arrests for theft.....	12,486
Employees arrested.....	4,164
Others (not employees).....	8,322
Cases pending.....	4,472
Convictions.....	7,140
Penitentiary, total years.....	2,062
Jails and reformatories, total years.....	1,687
Dismissed, paroled or suspended.....	2,046
Fines imposed.....	\$122,526
Approximate value of property stolen.....	\$904,111
Approximate value of property recovered.....	\$779,095

Safety at Grade Crossings

New Hampshire, like New York, is calling reckless automobile drivers to their senses. The Public Service Commission of the State, calling attention to frequent fatalities at crossings, and citing one where a man and a woman in an automobile were killed, and where also the locomotive and three cars of an express passenger train were derailed by the automobile, has issued the following notice:

IMPORTANT!

Automobilists' attention is called to section 2, chapter 88, Laws of 1917, requiring them when within 100 feet of a railroad grade crossing to reduce the speed of their cars to 10 miles an hour, under a penalty of a \$50 fine, or imprisonment, not exceeding three months, or both such fine and imprisonment.

This law is enacted for the public safety and the Public Service Commission will endeavor to see that it is obeyed, even if it becomes necessary to recommend prosecution by the proper officials, and a revocation of the offender's driving license.

PUBLIC SERVICE COMMISSION,

By WILLIAM T. GUNNISON, Chairman.

The commissioners express the conviction that some drastic action should be taken, for not only people riding in automobiles, but the general public, traveling in passenger trains, are put in danger every day by careless driving. The notice is circulated by the Motor Vehicle Department of the State Government, the same as was done in New York.

Report on Port Chester (N. Y.) Collision

The Interstate Commerce Commission has issued a report, dated October 30, and signed by W. P. Borland, chief of the Bureau of Safety, on the rear collision of westbound freight trains near East Port Chester, Conn., on July 31, 1919, in which two men, an engineman and an instructor, in charge of an electric locomotive, were killed, and their bodies burned.

East Port Chester is just across the river from Port Chester, N. Y., and appears to be the name of the signal station near which the collision occurred. This collision was reported in the *Railway Age* of September 19, page 579. The conclusion of the officers of the road was that both of these enginemen had been asleep for several minutes when they passed a stop signal set against them. The present report gives interesting details, but no further essential facts or conclusions. The electric locomotive is about the size and shape of a large eight-wheel caboose, and the two enginemen were in the front end, the engineman at the right hand window and the instructor at the left hand. Helper Bruce, spoken of in the report as "fireman," was in the rear end of the motor, talking with a brakeman. Bruce says that when the train started from Stamford, seven miles east of the point of collision, he went forward to perform some minor duty, and was told by the engineman to go back to the rear of the motor. The helper and the brakeman had their first warning of danger at the moment when the collision occurred, not having felt any application of the brakes. The engineman, when found, was conscious and asked "what happened," repeating the question several times, he (as well as the instructor) evidently having been asleep when he crashed into the standing train.

The inspector places responsibility primarily on the engineman, but also says it was the specific duty of the instructor to observe and require proper performance of duty on the

part of the engineman. The flagman of the leading train and also the conductor are censured for not having thrown off fuses as required by rule, their train having been stopped or slackened twice by adverse block signals. The accident, says Mr. Borland, again directs attention to the necessity of the adoption of some automatic train control device.

Fuel Situation in the Middle West

From December 16 up to the present time coal trains from the coal mining districts in Illinois, Iowa and Indiana have been running to the Chicago district on fast schedules to relieve the serious situation created in that district by the strike of miners and the consequent shortage of coal. At the time orders were issued which placed coal shipments on express schedules in the Northwestern and Central Western region, the Chicago district had not many days' supply of coal, and it had become apparent that drastic measures must be instituted to restore the coal supply to a normal basis. Several embargoes were necessary to expedite the movement of coal, among them a 10-day embargo on non-essential shipments, which was placed in effect on the Chicago, Milwaukee & St. Paul. In addition to this action, which has been taken in both the Central Western and Northwestern regions, all of Director General Hines' orders regarding the precedence of coal shipments over other classes of freight have been religiously put into effect. As a result of these movements, the fuel situation in the Chicago district has been greatly relieved and all of the large industries in this district have resumed full time operation. The steel mills in the Calumet region have abolished fuel conservation measures and are now operating full blast. Statistics compiled by John M. Glenn, president of the Illinois Manufacturers' Association, show that the losses suffered by Chicago due to the coal strike were in the neighborhood of \$33,600,000. This computation was based only on the loss to manufacturing establishments and included neither losses to mercantile houses nor to employers in the payment of employees while idle.

A. R. E. A.

The nominating committee of the American Railway Engineering Association has made the following nominations for officers: for president, H. R. Safford, engineering assistant to the regional director of the central western region, United States Railroad Administration, Chicago, Ill.; for vice-president, L. A. Downs, assistant general manager of the Illinois Central, Chicago; secretary, E. H. Fritch, Chicago; treasurer, G. H. Bremner, district engineer, bureau of valuation, Interstate Commerce Commission, Chicago. The candidates for director are: E. E. Adams, consulting engineer, Union Pacific, New York City; J. M. R. Fairbairn, chief engineer, Canadian Pacific, Montreal, Que.; F. G. Jonah, chief engineer, Frisco Lines, St. Louis, Mo.; Edwin B. Katte, chief engineer of electric traction, New York Central, New York City; F. P. Patenall, signal engineer, Baltimore & Ohio, Baltimore, Md.; Thomas S. Stevens, signal engineer, Atchison, Topeka & Santa Fe, Topeka, Kan.; E. B. Temple, assistant engineer of the regional director of the Allegheny region, Philadelphia, Pa.; F. E. Turneure, dean of the College of Engineering, University of Wisconsin, Madison, Wis.; J. E. Willoughby, chief engineer, Atlantic Coast Line, Wilmington, N. C. For members of nominating committee: W. A. Christian, senior civil engineer in charge of track and roadway for the bureau of valuation of the Interstate Commerce Commission, Chicago; Maurice Coburn, supervising engineer, Pennsylvania Lines, Indianapolis, Ind.; H. T. Douglas, Jr., chief engineer, Chicago & Alton, Chicago; E. A. Hadley, engineering assistant to the regional director, southwestern region, St. Louis, Mo.; C. M. McVay, division engineer, Kanawha & Michigan, Charleston, W. Va.; Arthur Montheimer, chief engineer, Elgin, Joliet & Eastern, Joliet, Ill.; U. E. Gillen, general manager, Toronto Terminals Railway Company, Toronto, Ont.; A. W. Newton, chief engineer, Chicago, Burlington & Quincy, Chicago; R. S. Parsons, chief engineer, Erie, New York, and W. P. Wiltsee, assistant engineer, Norfolk & Western, Roanoke, Va.

Traffic News

The total citrus crop to be moved from California this season will amount to over 40,000 car-loads, it is estimated in a statement issued recently by Hale Holden, director of the Central Western region.

The Chicago, Milwaukee & St. Paul, aiming to reduce materially the losses on perishable food stuffs, has created a new department, heated refrigerator service, in charge of O. M. Stevens. A new design of charcoal heater has been installed in 1,000 refrigerator cars in which are carried food products subject to injury by freezing.

Edward Chambers, director of traffic of the Railroad Administration, has issued a circular extending from December 31, 1919, to February 29, 1920, the date of expiration of Traffic Circular No. 9 authorizing railroads to apply special rates on roadbuilding material for federal, state or local governments.

The Houston Traffic Club, Houston, Tex., at its recent annual meeting elected a president of the club for the ensuing year—F. L. Clements, traffic manager of the Gulf Pipe Line Company. The annual banquet of the club was held at Bender Hotel, with about 150 members and guests in attendance.

The Traffic Study Club of Akron, Ohio, has been organized with a membership including traffic managers, assistant traffic managers, chief rate clerks and others interested in traffic and transportation problems. The purpose of the organization is to make a study of traffic and transportation conditions and to form a personal acquaintance between the traffic departments of the industries and of the railroads.

Excursion tickets at \$1.25 round trip, Philadelphia to Atlantic City and return, good only on Sundays, are to be sold by the Pennsylvania and the Reading Railroads, beginning on Sunday, January 11. This is a resumption of the regular low-rate excursions which were in effect before the general advance in passenger fares made by the Railroad Administration in 1918. The distance from Philadelphia to Atlantic City by the Pennsylvania, is 60 miles.

A foreign trade service to give Chicago manufacturers data on freight rates, duties, insurance, markets, packing and other important phases of export selling, including railroad shipping, is being established by the Continental & Commercial National Bank of Chicago. The purpose of this department is to encourage direct selling to foreign buyers instead of passing the goods through the hands of brokers at seaboard points, with the necessity of paying a commission for their service.

The proviso in section 15 of the act to regulate commerce, that until January 1, 1920, no increased rate, fare, charge or classification shall be filed except after approval of the commission, expired at midnight, December 31, 1919. Many applications were filed during the closing days of the year on which it was not possible to act, and the commission has answered that these will not be acted upon because the expiration of the proviso removes the commission's jurisdiction with respect thereto. These applications will remain in the files of the commission with notation of the reasons for their not having been passed upon.

The records for revenue freight loading on lines in the Northwestern region for the week ending December 30, show substantial increases over those established for the corresponding period last year. The number of cars loaded with coal and coke increased from 8,854 during the week ending December 30, 1918, to 15,521 during the corresponding period this year. Increases were also recorded in the loading of livestock, lumber and forest products and miscellaneous freight, whereas slight decreases are recorded in the loading

of grain and grain products and ore. The total number of cars loaded increased from 79,758 last year to 94,622 this year.

Shortage of grain cars continues to be acute in the Northwestern region, though the regional director has issued orders giving grain preference over all other commodities, and has directed that grain cars be given preference in the repair shops. Several grain receivers on the Chicago Board of Trade say that the most drastic orders can do little to relieve the situation; and they are as dissatisfied in the Central Western as in the Northwestern region. They are not much pleased with the regional directors' orders, but want absolute priority in transportation for their shipments.

The State of Nevada is the subject of an illustrated booklet for distribution among homeseekers which has been issued by the Agricultural Section of the United States Railroad Administration. Governor Emmet D. Boyle indorses the book, declaring that Nevada would regard it as an injury to herself, no less than to the prospective settler, if she should, by over-enthusiastic statements, induce persons to come there without having a fair chance for prosperity and happiness. The State has recently made an appropriation of \$1,000,000 for land reclamation work. Through its Agricultural College and other State departments, Nevada offers valuable assistance to the settler in the permanent development of his farm. The booklet contains information regarding topography, climate, schools, roads and highways, transportation, principal crops, markets, grazing lands, dairying and poultry.

According to a report on overseas traffic for the week ended December 31, 1919, made to the director general of railroads, 5,047 cars of commercial export freight were received at North Atlantic ports during this period, as compared with 1,709 cars for the same week of 1918. This shows an increase of 3,338 cars or 195 per cent for the last week in December, 1919, as compared to the corresponding period in 1918. At South Atlantic and Gulf ports as of December 28, 1919, there were 12,936 cars of export freight on hand, as against 12,680 cars on December 21, 1919, an increase of 256 cars. On December 31, 1919, there were stored in elevators at North Atlantic ports 8,922,933 bushels of grain. There were received during the week 2,235,300 bushels, while 3,503,960 bushels were cleared. The total amount of grain in storage represented 45 per cent of the elevator capacity of these ports, as compared with 54.3 per cent for the week previous. There were 7,223,613 bushels of grain stored in elevators at Gulf ports on December 31, 1919, representing 71 per cent of the total elevator capacity.

Coal Car Situation in Illinois and Indiana

Some interesting figures have been compiled by the Northwestern regional director's office relative to the coal car supply in the Illinois and Indiana coal fields and to the commercial coal situation in the Chicago district. The tabulations show in general what has been accomplished in supplying coal cars to the mine fields in this district since the ending of the strike of bituminous coal miners.

COAL CAR AND MINES SITUATION, ILLINOIS-INDIANA FIELD

Date	Cars ordered for today's loading	Cars placed at mines	Additional empty cars available	Cars loaded previous 24 hours
December 17.....	3,974	4,386	8,656	2,880
December 18.....	3,556	5,373	8,001	3,152
December 19.....	6,935	9,199	11,778	5,467
December 20.....	6,129	8,416	9,395	3,675
December 22.....	6,658	8,187	9,280	5,394
December 23.....	6,664	8,133	7,555	5,245
December 24.....	7,258	7,918	6,840	6,363
December 26.....	7,353	7,990	6,217	5,975
December 27.....	7,796	7,839	5,489	5,496
December 29.....	9,080	9,234	6,166	6,459
December 30.....	7,728	8,029	5,188	5,923
December 31.....	8,545	8,359	5,317	6,487
January 2.....	7,699	8,818	5,049	5,839

COMMERCIAL COAL SITUATION—CHICAGO

Date	Cars on industry tracks for unloading	Cars held for industries	Total	Cars unloaded by consignees
November 1.....	.....	.....	3,622	.....
December 19.....	1,415	1,200	2,615	706
December 30.....	2,657	2,227	4,884	1,706
December 31.....	2,480	2,095	4,575	1,734

Campaign for Making Shipments Safe

For the past year the Official Classification Committee has been engaged in an intensive campaign of education regarding the interpretation and enforcement of its rules covering the proper packing, marking and handling of freight. During this period F. W. Smith, member of the committee, has addressed over 20,000 representatives of the carriers and shippers at 312 meetings in 101 different cities throughout official classification territory, 879 railroad agencies being represented, and the great majority of the attendance has been made up of the local station forces, the men who are actually employed in the enforcement of the rules of the classification. For the past two months Mr. Smith has addressed 2,785 railroad representatives at 24 joint meetings of Loss and Damage Claim Prevention Committees.

It is believed that the interest aroused will have a far-reaching effect in helping the carriers to reduce the enormous wastage annually paid out on account of the acceptance of obviously weak and improperly marked packages which formerly have been accepted for transportation.

Mr. Smith says that "one of the most pleasing features of the campaign is the hearty co-operation that is being given throughout our territory by manufacturers who appreciate that it avails but little to produce a superior article unless that article is delivered to the consumer in perfect condition."

Movement of Canadian Wheat Crop

In answer to criticism of the Canadian railways concerning the movement of the 1919 Canadian wheat crop, the Canadian Railway War Board has issued a statement, the preamble of which states that "no class of Canadian industry, urban or rural, is or has been losing money through failure of the Canadian railways to provide proper service. . . ." The statement outlines the situation in regard to the movement of the wheat crop and attacks the Canadian Wheat Board, whose chairman recently criticized the performance of Canadian railways. It says, in part:

"Whether the railways have carried out their obligations depends upon the answer to four simple questions:

"First—Are the lake and seaboard elevators filled? Second—Have they been kept filled? Third—Will they continue to be kept filled until the crop is sold? Fourth—Have these elevators been able during the grain season to furnish wheat to vessels as rapidly as vessels were available?"

"The answer to these questions in every case and with but one reservation in one instance is 'Yes.' The records of the railroads is, therefore, absolutely vindicated. If they had knowingly accepted more wheat than they could have unloaded in the elevators they would then have been open to the charges of endangering public interests by wasting car capacity and track room in holding such wheat, and jeopardizing thereby the vital flexibility of their storage and terminal facilities.

"The only delays in the movement of wheat to the east out of the country have been due to the fact that the Canadian Wheat Board, which now endeavors to blame the railways, had itself prohibited the movement of wheat at any points in the greater part of Saskatchewan and in all parts of Alberta, between September 8 and September 26, at which date the embargo was removed in Saskatchewan. It was not until October 18 that it was modified in respect to Alberta and this embargo was not cancelled until November 18.

"It would be possible for the railroads to offer many excuses if there had been the least breakdown in their performance; first, the delays caused by the Canadian Wheat Board; second, the fact that the sudden cold weather augmented the coal movement eastward from Alberta during the month of October 23.55 per cent over what it had been in the previous year, thus making a demand for cars and track room eastward, at the same time as the wheat; third, the fact that the cold weather augmented the feed shortage increasing the volume of live stock shipment 55.2 per cent during the same period as compared with that period in 1918. It is, however, unnecessary for the railways to offer any excuses. The fact that the lake and seaboard elevators have been continuously filled with wheat; the fact that the eastern mills have been supplied; and the fact that the interior elevators in the west are not congested, are evidence of the hasty generalization which led to the attack by the chairman of the Canadian Wheat Board."

Three and a Third Millions of Tickets Sold in a Day

Frank Hedley, president of the Interborough Rapid Transit Company, New York City, on Tuesday, December 23, issued a statement thanking the people of the City of New York "for the co-operation which they gave Monday to the employees of the subway and elevated lines. On that day the Interborough carried the largest number of passengers in their history—3,308,486." (The figures give, presumably, the number of tickets sold, which on some days is, no doubt, larger than the number of persons actually traveling. Some passengers buy tickets for several days ahead. On the other hand some on Monday rode on tickets bought on a previous day.) Continuing, the statement said:

"The company appreciates the difficult work done by its employees and the efficient and patient manner in which they performed their duties under trying conditions, and believes that the public joins with it in hearty acknowledgment and thanks to them.

"The Interborough subway and elevated on Monday, carried a total of 3,308,486 persons, which was 534,223 more than were carried on the Monday before Christmas last year.

"The number of passengers carried on the subway and elevated on this one day was more than twice the usual number of passengers carried daily on the entire Pennsylvania Railroad system.

"In order to move this large number of people, 14,822 trains were run and there were no train accidents of any kind, and this huge number of people were transported in complete safety. This service was also maintained without any material delay, our reports showing that for the twenty-four hours ended at 9 a. m., Tuesday, there were but three delays, two of which—of 6 and 5 minutes respectively—occurred on the subway between five and six o'clock Tuesday morning.

"This is a record of which I am frank to say the company is very proud, and every employee is entitled to a substantial part of the credit. The achievement would have been impossible without good cheer and co-operation on the part of the public, and for that we are all very grateful."

Coal Production

An output of 8,261,000 tons of soft coal during Christmas week brought the total production from the beginning of the year 1918 to December 27, up to 451,618,000 tons, according to the weekly bulletin of the United States Geological Survey. With three working days remaining this suggests a total bituminous output for the year of 458,000,000 tons. This is the smallest in any year since 1915. Compared with the 579,386,000 tons of the record year, 1918, it is a decrease of more than 121,000,000 tons.

While the Christmas holiday caused a drop in total production, the rate per working day during the week ended December 27 was practically the same as that of the week before. The average for the five working days was 1,724,000 tons. This was 85.5 per cent. of the daily rate for the four weeks ended October 25, which may be regarded as normal.

The average for the week—85.5 per cent. of normal—is not, however, a true measure of the extent to which operations have been resumed in the union districts, for neither the day before Christmas nor the day after count as full working days. A better measure is found in the fact that on Monday, December 22, the output was 103 per cent. of normal, or in the fact that compared with production at Christmas time of last year, the week shows an increase of over 2,000,000 tons.

Car shortage reappeared as a significant factor limiting production during the week ended December 20. Its recurrence was a consequence of the extraordinary dislocation of traffic necessitated by the strike. Soon after the strike was settled the Railroad Administration had warned the public that during the period of readjustment local car shortages would be inevitable. The car supply in most districts was exceptionally favorable, but in certain fields of the northern and middle Appalachian region a shortage developed. Losses due to transportation disability were reported amounting to 37.7 per cent. in the Fairmont district; 40.2 per cent. in Somerset County and 30.3 per cent. in the Cumberland-Piedmont field. In these three districts the difficulty was the direct result of the general dislocation of distribution which accompanied the strike. To meet the shortage of coal in the central competitive field it was necessary to ship the coal mined in West Virginia and Pennsylvania largely to the Middle West, and very little to points east of the Allegheny mountains. This abnormal movement has interfered with the prompt return of empties.

Operators in the Logan district of Southern West Virginia reported a loss due to transportation of 43.9 per cent of capacity. It is stated by the railroads that the causes were a derailment which interfered with car placements on one day, and a congestion of westbound loads which obtained practically throughout the week.

Commission and Court News

Personnel of Commissions

Lewis Nixon, public service commissioner of the State of New York, First District (New York City), announces the appointment of John H. O'Brien as chief of the Transit Bureau at a salary of \$10,000 a year; also of the appointment of Morgan T. Donnelly as third deputy public service commissioner at a salary of \$7,500.

The Alaskan Engineering Commission has created a supply division and has appointed Lieutenant-Colonel H. P. Warren, recently discharged from army service, as engineer in charge with headquarters at Seward, Alaska. Col. Warren will have general supervision over all supplies required for the construction of the Alaska Northern. The commission has also created an accounting division and has appointed B. H. Barndollar, examiner of accounts and manager of the land and industrial department with office at Anchorage, Alaska, as examiner of accounts in charge of the newly created division. Mr. Barndollar will have charge of all accounting matters for all departments and will retain the same headquarters.

State Commissions

The San Francisco, Napa & Calistoga (Electric) Railway, with a view to giving the Mare Island Navy Yard direct rail communication with the mainland, is planning a connection with the rails laid by the government when it built the causeway between Vallejo, Cal., and Mare Island. To carry out this plan the company has applied to the Railroad Commission of California for authority to lay a single track crossing several streets at grade, in the city of Vallejo. This track will connect with the company's main line near Napa Junction, where interchange will be effected with the Southern Pacific.

Court News

Damages to Freight Not in Contemplation of Parties

In an action against a railroad company for damage to an asphalt plant transported by it and wrecked in transit, the Tennessee Supreme Court holds that no recovery could be had for overhead expenses due to the enforced idleness of the plaintiff's workmen, such item of damage not having been within contemplation of the parties. The railroad was not advised that delay in transporting the plant would result in a loss by such overhead expenses.—West Const. Co. v. Seaboard Air Line (Tenn.) 210 S. W. 633.

Lease of Freight Offices—Covenant as to Heating

In a suit for specific performance of a covenant by a lessor to heat "to a proper warmth for office purposes" the freight offices leased to a railroad, the provision relating only to the degree of heat to be furnished and not to the time during which heat was to be furnished, and being therefore ambiguous, the Massachusetts Supreme Court holds that evidence was admissible to show the conditions and circumstances under which it was made in order to ascertain whether it was intended to obligate for heating during the night as well as the day. The evidence showed that the lessor knew that the premises would be used as a railroad office at a freight terminal, and that it was necessary for the proper operation of the railroad to run freight trains on Sunday and at night when passenger traffic is light, and that it was necessary to keep a force of clerks at the freight offices continuously. On the evidence it was error to rule that the railroad was not entitled to have the premises heated 24 hours in the day, including Sundays and holidays.—New York Central v. Stoneman (Mass.) 123 N. E. 679.

Foreign Railway News

German State Railways

LONDON.

An article abstracted from the Frankfurter Zeitung by Modern Transport states that the transfer of the administration of the various German State railways to the government will take place on April 1, 1920, and not on April 1, 1921, as originally announced.

Types of Electric Locomotives on the Italian Railways

An article abstracted by the Technical Review from L'Industria states that one type of 3-phase electric locomotive, designated No. E.330, has a length of 11 meters between the buffers; it weighs 74 tons and is capable of developing about 2,900 hp. It has the triangulated system of connecting rods, liquid rheostat and electro-pneumatic contactors and switches. The traction motors can be connected in parallel or in cascade. The trucks are of a newer and lighter design. The triangulated connecting rod is of the open frame or lattice type. Special investigations were undertaken with a view to securing the proper balancing of the centrifugal forces, so as to obviate "knocking" at high speeds.

Two other groups of locomotives, Nos. E.331 and E.332, have also been introduced with satisfactory results. They are approximately the same in general design as No. E.330, but somewhat heavier, being 92 to 93 tons, while the hauling capacity is correspondingly reduced. They are also fitted with twin trucks so as to be able to take curves easily. The power is transmitted through auxiliary shafts and not by the triangulated system of connecting rods as in the other type. The electrical equipment, however, is different. In both the present types four running speeds are obtained as follows: two by commutating the poles and two by connecting in cascade.

Railway Progress in Rhodesia

The traffic manager of the Beira & Mashonaland and the Rhodesia Railways, Beach Smith, who went out from England in 1901 and is now in England on a long vacation, has recently given an English paper an idea of the progress made by these railways in fulfilment of Cecil Rhodes's dreams.

"In 1901," Mr. Smith is quoted as saying, "when I first went to Rhodesia, the only railways ran from Beira to Salisbury 374 miles, and from Cape Town to Bulawayo. Bulawayo and Salisbury are the two largest towns. They are now connected by rail, which has also been extended northwards from Bulawayo to the border of the Belgian Congo, nearly 500 miles away. The Belgians have continued the railway construction from the border to the Congo river system, and it is now possible to travel in comfort from Cape Town to Beira right through the heart of Africa to Boma on the west coast, or to Dar-es-Salaam on the east coast.

"Branch railways have been constructed to various outlying districts, and the total mileage of the Rhodesian railway system is now about 2,000 miles. Gold mining is the principal industry of the country, with farming as a good second. Considerable activity exists in such directions as chrome ore, lead, copper and asbestos mining. Cattle breeding is being rapidly developed, particularly in Matabeleland, the western portion of Rhodesia. Mashonaland, the eastern portion, is more suitable for maize growing, though cattle also do well. The purely laboring work in all industries is performed by the native Kaffirs, only skilled labor and work involving education and responsibility being done by white men. The natives as a rule do not speak English, a few of them can read and write, but they are, generally speaking, trustworthy and reliable in performing the tasks allotted to them if reasonable supervision is exercised. European wages are high, but the cost of living is also high. Probably the ratio between the two is much the same as exists in England today.

"A scheme has been prepared for providing free land for ex-soldiers desiring to settle in Rhodesia and possessing a little

capital. The prospect for them is very good. During the war Rhodesia probably suffered as little as any country. Food was plentiful. They had had no ration cards. As most of the exports were largely required for war purposes, a considerable stimulus was given to mining. Each month the railways carried to the port of Beira for export something like 5,000 tons of chrome ore, 2,500 tons of copper, 1,000 tons of asbestos, 1,000 tons of lead, etc., which was no doubt very useful in munition making. Then the country's grain supplies were also exported to England each year. When I left there were something like 50,000 tons of maize waiting for shipping, being the surplus from last season's harvest. Railway traveling in Rhodesia (as previously remarked) is far from being uncomfortable.

"All main line trains consist of modern corridor sleeping saloons, electrically lighted, each compartment containing a wash basin and most of the saloons a bathroom. Dining cars run on all the long-distance trains right up to the Belgian Congo and beyond. With regard to goods traffic I may say that practically the whole of the coal and ore traffic is carried in wagons of 38 tons capacity, and the smallest wagon carried 15 tons. The thing which impresses one most about the English railways after seeing them again, after nearly nine years' absence is the diminutive wagons employed for goods traffic. I cannot imagine that any convenience attaching to their use can compensate for the enormous waste in haulage which they involve as compared with the big wagon."

Roumanian Railway Situation

[British Board of Trade Journal, Oct. 2, 1919.]

The Director General of Roumanian Railways made the following statement under date of August 18, 1919:

On November 12, 1918, at the time of the armistice, both in Wallachia and in Moldavia there were only 150 locomotives at the disposal of the Roumanian Government for the whole of the original Kingdom. In spite of this it was necessary to lose no time to arrange for the following transportation:

- (1) Repatriation of more than 150,000 refugees, with their luggage, from Moldavia.
- (2) Repatriation of the Roumanian Army, with all its munition depots and equipment.
- (3) Redispersing, after reorganization, of the Roumanian Army of the Dneister, as well as that of the Theiss.
- (4) Revictualling of the country with the cereals received from England and the United States at the ports of Constantza and Braila.

At the same time, it was necessary to busy ourselves from the first with reestablishing workshops to enable them to handle the repairs of locomotives and freight and passenger cars, tracks and bridges and station buildings and installations.

NEED OF MATERIALS AND OF CREDITS.

One of the difficulties encountered in the repair of rolling stock was the absence of materials. All belting had been requisitioned. Luckily, however, a small amount of material was found in certain depots which the Germans had not had time to destroy. The workshops were started again in the month of December. The conditions of labor were miserable. Without clothes and food the morale was not conducive to hard work. But the most important cause of low output was the lack of materials. It was for this reason that the Government was obliged to stop piece-work—the only means of controlling the work. It was impossible to establish rates for making any definite piece while the proper material was lacking, and it was necessary to employ other materials and to have recourse to methods invented locally for each piece. With coke and pig iron lacking, it is easy to imagine the output of the foundries.

The English mission at once realized the state of things and lost no time in arranging a credit of £500,000 for the materials that were urgently necessary. But this material could suffice only for two months, during which it was thought that Roumania, having obtained the desired help from the Allied Powers, would be able to put its rolling stock into condition again.

Unfortunately, the country is still awaiting other credits. To make matters worse, only a small quantity of the material promised has come to hand; scarcely 500 tons of the total of 2,000 has reached the workshops yet, or is in one of the Roumanian ports, or en route at the time of writing.

CONDITION OF ROLLING STOCK.

In order to understand the condition of the locomotives it will suffice to say that since 1914 there have been no materials and that it was only by the interchange of parts at the expense of the

rest of the locomotives that it has been possible to keep some going. The final limit has now been reached, however: 130 engines are still working but are momentarily in danger of falling to pieces. Since the armistice 280 engines have left the workshops to deal with the daily train kilometrage of 25,000 in the original Kingdom of Roumania. They would do more if it were not for the difficulties, in maintaining a good service due to the destruction of the other installations such as telegraphs, which necessitates their stopping at every station, and by increasing the block length to the total distance between the stations. The destruction of the safety devices for the switches and signals, and, finally, the congestion of traffic, due to the insufficient number of trains, also promote delays. All these causes contribute not a little to the poor utilization of locomotives, without mentioning the low calorific value of the coal from the Petrosani mines, especially for engines not adapted for coal burning.

Outside help has been insignificant. Sixty locomotives have been received from France, which have had to be put into workshops for assembling and for having the boiler tubes cleaned.

CONDITIONS IN TRANSYLVANIA—REPAIRS TO TRACKS, BRIDGES, STATIONS, ETC.

The railway system taken over from Hungary is none the better for having been used by the Germans and having been abandoned by the Hungarians, who took with them all they could.

Some difficulties have arisen from the union of three railway systems—Roumania, Austria, and Hungary—in Transylvania. The difficulties of different languages, different methods of working, etc., caused by the fusion of such different railway systems, will be apparent to any specialist, and their union will not be the work of a day.

The best proof of the activity of Roumanian engineers is the speed with which they have reestablished the railway tracks. Three months after the evacuation the train service was resumed on all Roumanian lines, with the exception of the two large bridges over the Danube and the Sereth. The rebuilding of these bridges is continuing.

The working is hindered greatly by the destruction of the safety apparatus, water installations, etc. Although of only secondary importance, they form together a sufficient cause of delay, and are the cause of the bad use of material. The state of the station building is the worst. Certain stations no longer exist. In this case, however, the authorities are not waiting for foreigners to help in the work, the materials for which can be found to a large degree in the country.

If the country can obtain credits for materials, the work of reconstruction would proceed rapidly. It will certainly be necessary to complete existing material with new cars and locomotives, unless these can be obtained from Hungary—i. e., the material belonging to the Transylvanian railways and that in which the Germans took from Roumania.

American Firms Offer to Establish Belgian Car Works

According to a despatch from Brussels, copyright by the Chicago Tribune, the Belgian Government has asked for offers for the building of railway rolling stock.

One offer has come from two American concerns, the despatch says, the Middleton Car Company and the American Car & Foundry Company, which combined efforts for the occasion. They offer to create on Belgian soil works for the construction of railway cars which would be installed on American lines. They would, however, employ exclusively Belgian labor; only the chiefs and the engineers would be Americans.

After the delivery of the ordered carriages this model factory would be put, free of charge, at the disposal of the Belgian State. It would constitute ideal repair workshops with a staff of 2,500 men, which would have gone through a five months "American training." The works would be connected by about eight miles of railroad.

The Middleton Car Company started in 1917 a model factory for the American Army in France at La Rochelle which has an output capacity of 110 railway carriages a day. The parts for the cars would come from the United States and would be put together in the Continental shops.

Commenting on the above despatch in New York, W. H. Woodin, president of the American Car & Foundry Company, said that such a plan had been considered while he was in Belgium recently, but that final action had not been determined and that consequently the matter had been dropped.

Equipment and Supplies

Locomotives

THE BOSTON & ALBANY is inquiring for 20 locomotives.

THE EL PASO SOUTHWESTERN is inquiring for 5 locomotives.

THE BINGHAM & GARFIELD is inquiring for 5 Mallet locomotives.

PERIN & MARSHALL, 2 Rector street, New York, have ordered 2 switching locomotives from the Baldwin Locomotive Works. These locomotives will weigh 58 tons on the drivers.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of November 19, as inquiring for 11 Mikado locomotives, has ordered this equipment from the American Locomotive Company.

Freight Cars

THE SEABOARD AIR LINE is inquiring for 2,000 fruit and vegetable cars.

THE HERF & FRERICHs CHEMICAL COMPANY, St. Louis, Mo., has ordered 8, 10, 100 gal., 50-ton truck, tank cars from the Pennsylvania Tank Car Company.

THE LEVI SMITH REFINING COMPANY (Clarendon Refining Company), Clarendon, Pa., has ordered 3, 8,050 gal., 50-ton truck, tank cars from the Pennsylvania Tank Car Company.

PERIN & MARSHALL, 2 Rector street, New York, reported in the *Emergency Bulletin* of October 13 as inquiring for 80, 50-ton freight cars, including 50 flat cars, 20 coke and 10 self-dumping gondolas, has ordered this equipment from the National Steel Car Corporation, Hamilton, Ont.

Iron and Steel

THE GREAT NORTHERN RAILROAD COMPANY is inquiring for 2,160 tons of structural steel for bridges.

THE CHICAGO, BURLINGTON & QUINCY RAILROAD COMPANY is inquiring for 1,000 tons of structural steel for bridges.

The principal railroads have begun to place liberal orders for rails. An order for 250,000 tons is reported in the Chicago district on which rolling will be started at once, and in addition orders for between 100,000 and 150,000 tons have been tentatively placed. The Illinois Steel Company is said to have already begun rolling 40,000 tons for the Rock Island and the Union Pacific, 30,000 tons for the Great Northern, 12,000 tons for the Minneapolis, St. Paul & Sault Ste. Marie, 10,000 tons for the Chicago & Alton, 6,000 tons for the Chicago, Indianapolis & Louisville, and 5,000 tons for the Minneapolis & St. Louis. The Lackawanna Steel Company has orders for 15,000 tons for the Great Northern and 10,000 tons for the Northern Pacific. The Atchison, Topeka & Santa Fe will order shortly 70,000 tons; a part of the order will probably go to the Colorado Fuel & Iron Company. The Chicago, Milwaukee & St. Paul will order 20,000 tons. The Toledo, St. Louis & Western has bought 5,000 tons and the New York, Chicago & St. Louis is planning to order 7,500 tons.

Hotel System of Canadian Railway.—The Dominion Atlantic Railway, which runs through the district, connecting Yarmouth with Halifax, Nova Scotia, has purchased the Aberdeen Hotel at Kentville, Nova Scotia. Following the example of the Canadian Pacific Railway, the Dominion Atlantic Railway is planning to have its own system of hotels on its line. The Aberdeen is the second hotel acquired by the said railway during the present year. This hotel is very attractive and well situated. The Aberdeen will be operated the year around, and it is the purpose of the management to cater to general commercial interests as well as to tourist traffic. The other hotel is called the "Pines," and is located at Digby, Nova Scotia.—*Commerce Reports.*

Supply Trade News

The American Car & Foundry Company has begun to purchase approximately \$200,000 worth of machine tool equipment.

E. E. Griest has been appointed general superintendent of the Chicago Railway Equipment Company, Chicago, effective January 2.

Edward D. Kilburn, who since March 16, 1917, has been New York district manager of the Westinghouse Electric & Manufacturing Company, was recently elected vice-president and general manager of the Westinghouse Electric International Company, New York, which was formed in the spring of 1919 to succeed the Westinghouse Electric Export Company. It handles the Westinghouse foreign business and is world-wide in its scope. Mr. Kilburn was graduated from Cornell University, and immediately after leaving college entered the employ of the Westinghouse Electric & Manufacturing Company, for a number of years being located at the Syracuse office of the company.



E. D. Kilburn

Subsequently, he was transferred to the Westinghouse Machine Company, with headquarters at New Haven, Conn. In 1915 he returned to the Electric Company as manager of the power division of the New York office. A year later he was also made manager of the railway and lighting divisions, subsequently becoming manager of the office. Maurice Coster, who has been actively engaged for more than 30 years in handling the foreign interests of the Westinghouse Company, continues as vice-president of the International Company, with advisory duties.

J. H. Coley, sales manager of the George D. Whitcomb Company, Rochelle, Ill., has resigned after seven years' service to engage in other business.

The Cleveland Twist Drill Company has purchased a 17-acre factory site on the eastern outskirts of Cleveland, Ohio, to provide for factory enlargements it expects to make in the near future.

Stone & Webster, Boston, Mass., with offices also at New York and Chicago, announce that Frederick P. Royce, George O. Muhlfeld, Henry B. Sawyer, Frederick S. Pratt, Harry H. Hunt and Howard L. Rogers became partners in the firm of Stone & Webster, effective January 1.

The General American Tank Car Company, Chicago, will build a plant on the Mississippi river, a short distance above New Orleans, La., to cost \$1,000,000. The new plant will include a machine shop and steel foundry for the manufacture of tank cars, gondolas, flat cars, etc.

John S. Worley, former member of the Engineering Board of the Bureau of Valuation of the Interstate Commission, in charge of the western district with headquarters at Kansas City, Mo., whose resignation from the latter body was announced in the *Railway Age* of November 21, 1919, has become a member of the firm of Thompson & Black, valuation engineers, New York City.

On January 1 all of the sales and contracting business that has for many years been carried by the **General Fire Extinguisher Company** was taken over by the **Grinnell Company, Inc.**, Providence, R. I.

J. F. Comee, formerly associated with the Camel Company, as representative at Chicago, has been appointed manager of sales, with headquarters at Chicago, for the **Hutchins Car Roofing Company**, Detroit, Mich.

John C. Barber, founder and president of the Standard Car Truck Company, Chicago, and inventor of over 75 railway truck appliances, died in Los Angeles, Cal., on December 27, 1919. He was the inventor of a device for limited lateral play in railway trucks which has been applied to about 20 per cent of the freight cars of the country.



J. C. Barber

Mr. Barber was born in St. Lawrence county, New York, on December 12, 1844. In September, 1861, he enlisted in a Wisconsin regiment and served throughout the Civil war. In 1865, he began his railway career with the Chicago & North Western in its locomotive and car building department at Fond du Lac, Wis., filling various positions there for

six years. He then became connected with the mechanical department of the Northern Pacific shops at St. Paul, Minn., and in 1873, was appointed superintendent of the car department of the Missouri, Kansas & Texas, with headquarters at Sedalia, Mo. From 1883 to 1885 he was superintendent of the Rio Grande division of the Texas & Pacific, with office at Fort Worth, Tex. From the latter date until he resigned to market his inventions, in 1896, he was in charge of the car department of the Northern Pacific at St. Paul, Minn. It was while serving in this latter capacity that he perfected his invention for lateral roller motion trucks. In 1898 he organized the Standard Car Truck Company, and of this organization he retained the presidency until his death.

The site and buildings occupied by the Symington Chicago Corp., at West 74th street and South Ashland avenue, Chicago, have been purchased by the United States Government for \$235,000 and will form part of the arsenal system of the government.

The **Duntley-Dayton Company**, Chicago, manufacturers of pneumatic and electric tools, has changed its name to The Duntley Pneumatic Tool Company. There is no change of officers of the company, the change in corporate title having been for business reasons.

The **Western Electric Company**, New York, announces that assignments have been made to handle steamship and steam railroad business as follows: E. R. Morgan, at Boston, for New England territory; Wm. Lancaster, Richmond, Va., for Virginia and North Carolina, and R. D. Eves, at Cincinnati for Kentucky, Tennessee, southern Indiana, southern Ohio and the western part of West Virginia.

James H. Grose, Youngstown (Pa.) district manager of the **Carnegie Steel Company**, Pittsburgh, Pa., has been elected a member of the board of directors of the **Brier Hill Steel Company**, Youngstown, Ohio, succeeding **W. A. Thomas**, who has resigned, effective January 27, 1920. **I. Lamont Hughes** has been appointed to succeed Mr. Grose as district manager of the **Carnegie Steel Company**.

R. B. Jones and **E. E. Hart**, both formerly of the **Dale-Brewster Machinery Company, Inc.**, Chicago, have resigned and organized the **Industrial & Railroad Supply Company**, with headquarters at 114 North Desplaines street, Chicago.

Paul E. Carter was appointed on January 1, 1920, resident manager of the Eastern district, with headquarters at 30 Church street, New York City, of the **General Railway Signal Company**, Rochester, N. Y., to succeed **F. H. Jones**, who has resigned to go into other business. With the exception of a year spent in the signal department of the New York Central at New York, and two years in the Corps of Engineers, United States Army, Mr. Carter has been continuously in the employ of the General Railway Signal Company since the time of his graduation in 1908, from the **Rensselaer Polytechnic Institute**. After some time spent on outside construction, he was successively employed in the Rochester factory testing department and the commercial engineering, advertising and engineering departments of the main office of the General Railway Signal Company at Rochester. In 1913, he was appointed resident engineer with headquarters at the New York office and early in 1917 was transferred to the sales department. Mr. Carter enlisted in the Officers Training Corps in May, 1917, returning from France as captain, Transportation Corps, in the summer of 1919. He shortly thereafter re-entered the employ of the General Railway Signal Company as sales engineer in its New York office, which position he held until his appointment on January 1, noted above.



P. E. Carter

Major J. L. Hays has been appointed electrical engineer of the **Stone Franklin Company**, with office at 18 East Forty-first street, New York City. Major Hays has a wide experience in electrical engineering problems, particularly as regards electrical car lighting. He was graduated from **Lehigh University** in 1909, with the degree of electrical engineer. Upon graduation he joined the electrical department staff of the **Baltimore & Ohio** and worked successively as mechanic, draftsman, inspector, general foreman and assistant engineer. From the **Baltimore & Ohio** he went to the **Seaboard Air Line** as electrical engineer and when war was declared with Germany he was commissioned as major in the **Quartermasters Corps** and was the officer in charge of the electrical section of the engineering branch, responsible for electrical construction for the army in the United States.



J. L. Hays

F. C. Thornley & Co., Inc., constructing and consulting engineers, recently organized with temporary headquarters at 18 West Thirty-eighth street, has opened permanent offices

at 31 West Forty-third street, New York. This company specializes in mechanical labor saving systems and is prepared to design, construct and organize for operation, installations for the economical handling of materials. As specialists in solving fuel problems the organization is also prepared to design, construct and organize for operation, locomotive coaling stations, transfer terminals, distributing yards and industrial plants. The company will also act as constructing and consulting engineers in the carrying out of large undertakings and difficult projects and make engineering and financial reports and appraisals.

S. F. Bowser & Company, Inc., have extensive plans under consideration for expansion during the coming year. The company plans the erection of a warehouse and office building at Dallas, Tex., and the organization of a subsidiary corporation to be known as **S. F. Bowser & Company of Texas**, for the sale of the Bowser products throughout that state and adjacent territory. **E. P. Murray**, formerly assistant general sales manager with headquarters at Chicago, will assume the management of the new company at Dallas. During the war the company closed its branch offices at Denver, Colo., Memphis, Tenn., and St. Louis, Mo. These offices will be re-established and a staff of managers and assistants have already been assigned. **A. S. Bowser**, assistant to the treasurer, with headquarters at Fort Wayne, Ind., has been appointed manager of the Denver office. **B. L. Prince**, who has been district manager of the Dallas office, has been transferred to the Memphis office. **Willard D. Smith**, connected with the sales department, has been appointed manager of the St. Louis office. A new district office will be established at Detroit, Mich., and **L. E. Porter**, assistant district manager at Fort Wayne, Ind., has been appointed district manager of the new Detroit office.

Arthur A. Frank, in charge of the western territory of the **Standard Railway Equipment Company**, New Kensington, Pa., with office at Chicago, has been elected president of the company.



A. A. Frank

Mr. Frank was born at St. Louis, Mo. For a number of years he was connected with the transportation and mechanical departments of the Missouri Pacific. In 1911 he entered the supply trade field as secretary to the president of the T. H. Murphy Company, New Kensington, Pa., and later was promoted to the position of factory manager. In 1914 he was appointed sales agent of the Standard Railway Equipment Company in charge of the southwestern territory, with office in St. Louis, Mo. In July,

1918, he was transferred to Chicago in charge of the entire western territory, which position he retained until his recent election as president. In addition to the presidency of the Standard Railway Equipment Company he will retain his office as vice-president of the Pressed Steel Manufacturing Company, the Imperial Appliance Company and the Union Metal Products Company.

The Locomotive Terminal Equipment Association, Inc., has recently been organized by a group of manufacturers and dealers in equipment for use in locomotive terminals, for the purpose of studying the needs for improvement in locomotive terminals in order to secure quicker handling, repairing and turning of locomotives. In the distribution of such data as is developed from the surveys made or from other sources, a policy of impartiality is to be followed and no special advantage is to accrue to any individual firm or corporation that may be a member of the association. The

officers are: President, William R. Toppan, manager railroad department, William Graver Tank Works; vice-president and secretary, Bruce V. Crandall; treasurer, John S. Maurer, secretary and treasurer, National Boiler Washing Company; general counsel, Frank J. Loesch. The board of directors consists of the following seven members: William R. Toppan, Bruce V. Crandall, Spencer Otis, president, National Boiler Washing Company; William Robertson, William Robertson & Co.; Frank W. Miller, president, F. W. Miller Heating Company; Robert A. Ogle, president, Ogle Construction Company, and Norman S. Lawrence, vice-president and assistant sales manager, Whiting Foundry Equipment Company. The association has headquarters at the office of the secretary, room 1824, Lytton building, Chicago.

The Westinghouse Air Brake Company, Pittsburgh, Pa., has created an export department to provide facilities adequate to handle the increasing export business and to develop



E. A. Craig

its foreign trade to a greater extent than has been heretofore possible, with headquarters in the Westinghouse Building, Pittsburgh, Pa. **E. A. Craig** is export manager of the new department. He has been associated with the Westinghouse Air Brake Company for 32 years, beginning his career with that company in 1888. In 1905 he was appointed auditor and assistant secretary and in 1906 was made southeastern manager of the company. This department will be represented in the New York office by

W. G. Kaylor, and in South America by **R. M. Oates**. The Westinghouse Air Brake Company controls the following foreign companies: The Compagnie des Freins Westinghouse, Sevan, France; the Compagnia Italiana Westinghouse dei Freni, Turin, Italy; the Westinghouse Brake Company of Australasia, Ltd., Concord West, New South Wales, Australia; the Westinghouse Eisenbahn Bremsen Gesellschaft, Hanover, Germany; the Societe Anonyme Westinghouse, Petrograd, Russia; and the Westinghouse Brake Company, Ltd., of London, England, represented in China by Jardine, Matheson & Co., Ltd., Shanghai; in Denmark and Sweden by Frants Alling, Puggaardsgade 4, Copenhagen; in Holland by Valliant & Sluyterman, Noordeinde 18a, The Hague; in Japan by Sale & Frazar, Ltd., Yaesu Cho, Tokyo; in Norway by "Vulkan," Jernstoberi og mek. Vaerksted, Christiania, and in South Africa by Bellamy & Lambie, 621 Consolidated buildings, Johannesburg.

Trade Publications

LINK-BELT ELEVATORS AND CONVEYORS.—The Link-Belt Company, Chicago, Ill., has recently issued a catalogue of 108 pages known as Book No. 375, devoted to the labor saving elevators and conveyors manufactured by this company. It is profusely illustrated, showing the different types manufactured and the various ways in which they can be utilized in handling bags, barrels, boxes, hay, lumber, miscellaneous freight, machinery, etc.

TANK FRAME LOCOMOTIVES.—In Record No. 94 the Baldwin Locomotive Works describes tank frame locomotives for narrow gage railways. These locomotives have been designed for operation on rough tracks and sharp curves and are particularly suitable for industrial, contractors' and other classes of special service. Illustrations of a number of locomotives of this type built by the Baldwin Locomotive Works are contained in the booklet, with tables showing their general dimensions.

Railway Financial News

ATLANTIC NORTHERN.—This railway is to move its headquarters from Atlantic, Iowa, to Kimballton, according to an order issued after a recent meeting of the board of directors of the company. At the same time it was decided to reorganize the company and action was taken looking to a new bond issue. It is planned to pay off the first mortgage bonds and it is expected to have left a fund of \$11,000 as a working capital for the road.

BOSTON & MAINE.—In an editorial commenting on the Boston & Maine reorganization in the November 28 issue of the *Railway Age*, it was said that the increase in rates to go into effect in 1920 would add nearly \$8,000,000 to the revenues of the Boston & Maine. This should have read \$1,000,000.

CANADIAN NORTHERN.—William A. Read & Co. are offering an issue of \$7,500,000 equipment trust 6 per cent gold certificates, due 1920 to 1929, at prices to yield from $6\frac{1}{4}$ to $6\frac{1}{2}$ per cent, depending on maturity date. The issue is due in twenty semi-annual installments of \$375,000 each, the first being due June 1, 1920, and the last December 1, 1929.

CANADIAN PACIFIC.—Honorary Col. Sir John Craig Eaton, president of the T. Eaton Company, Ltd., Toronto, Canada, has been appointed a director.

GRAND TRUNK PACIFIC.—W. P. Hinton, vice-president and general manager of this company with office at Winnipeg, Man., has been elected a director.

OAKLAND-ANTIOCH.—In an amended application filed by the reorganization committee of the Oakland-Antioch Railway, the Railroad Commission of California is asked to further modify its previous orders so that the bondholders of the Oakland, Antioch & Eastern, the Oakland & Antioch and the San Ramon Valley may exchange their bonds for common and preferred stock of the new Oakland-Antioch Company. In exchange for such bonds, they are to receive 7 per cent preferred stock in an amount equal to 20 per cent of the bonds deposited under the reorganization plan and common stock in an amount equal to 100 per cent of the bonds so deposited. The reorganization committee further asks that the new company be permitted to issue approximately \$6,550,000 of common stock and \$1,330,000 of preferred stock, making a total issue of \$7,880,000. In addition, the commission is asked to authorize the new company to execute a mortgage securing the payment of \$3,000,000 of bonds and permit the new company to issue forthwith under such mortgage not to exceed \$900,000 of 6 per cent serial bonds for the purpose of securing money necessary to pay off prior liens and non-assenting bondholders, provide working capital, pay such reorganization expenses as may not be paid otherwise and to pay cost of extensions, additions and betterments. The \$900,000 of bonds, if issued, will constitute a first lien upon the properties now owned by the Oakland, Antioch & Eastern, the Oakland & Antioch and the San Ramon Valley.

SAN DIEGO & ARIZONA.—Conditions due to the war and the increased cost of labor and materials has added \$710,912 to the cost of constructing this road, according to the Railroad Commission of California, in an opinion issued recently in connection with an order allowing the San Diego & Arizona to issue bonds to meet the additional expense. The bonds will be taken at par by the Southern Pacific, which advanced the money to meet demands of contractors and builders in order that construction work could go on. Previous orders issued by the commission provided for the issuance of \$5,826,800 of preferred stock and \$7,289,088 of bonds to the Southern Pacific, and John D. and A. B. Spreckels to reimburse them for money advanced for the road's construction.

SOUTHERN PACIFIC.—William Sproule has been elected a director to succeed Paul Shoup, resigned.

Railway Officers

Railroad Administration

Operating

M. J. Ruland, trainmaster on the Denver & Rio Grande at Provo, Utah, has been transferred to the Green River division, and is located at Soldier Summit, Utah.

W. H. Smith, assistant superintendent of the Los Angeles & Salt Lake at Salt Lake City, Utah, has been promoted to superintendent, succeeding **H. E. Van Housen**, retired.

F. S. DeVeny, assistant road foreman of engines of the Baltimore & Ohio, Chicago Terminal, has been promoted to trainmaster, with headquarters at Chicago, succeeding **J. W. Dacy**, deceased.

J. L. Close, superintendent of the Great Northern at Whitefish, Mont., has been transferred to the Harve division, succeeding **T. J. Dixon**, recently appointed acting superintendent at Great Falls, Mont., and now assigned to other duties.

E. F. Rummell, paymaster on the Chicago, Milwaukee & St. Paul, with office at Minneapolis, Minn., has been appointed acting superintendent of the Twin City terminals, succeeding **G. A. Van Dyke**, who has been assigned to other duties.

G. M. Mergen has been appointed acting trainmaster of the Salt Lake division of the Southern Pacific, with headquarters at Mina, Nev., with jurisdiction over the Mina subdivision, succeeding **V. S. Andrus**, who has been temporarily assigned to other duties.

C. L. Whiting, superintendent of the Northern Montana division of the Chicago, Milwaukee & St. Paul, with office at Lewistown, Mont., has been transferred to the Trans-Missouri division, with headquarters at Mobridge, S. D., succeeding **A. E. Campbell**, who has resigned.

Executive, Financial, Legal and Accounting

L. E. Katzenbach, federal treasurer of the Great Northern, with headquarters at St. Paul, Minn., has resigned. No successor will be named during the remaining term of government control.

B. W. Scandrett, general attorney of the Great Northern at St. Paul, Minn., has been appointed assistant general solicitor, succeeding **D. F. Lyons**, appointed general solicitor as the successor of Charles Donnelly, notice of whose new appointment appeared in the *Railway Age* Emergency Bulletin of October 13.

A. G. Wells, general manager of the Atchison, Topeka & Santa Fe, Coast Lines, with headquarters at Los Angeles, Cal., has been promoted to federal manager of the Atchison, Topeka & Santa Fe, the Panhandle & Santa Fe, the Rio Grande, El Paso & Santa Fe, the Grand Canyon, the Kansas Southwestern, and the Atchison Union Depot and Railroads, with office at Chicago, succeeding **W. B. Storey**, whose election to the presidency of the Atchison, Topeka & Santa Fe was announced in the *Railway Age* of November 23 (issued December 10). **I. L. Hibbard**, assistant general manager at Los Angeles, has been promoted to general manager, succeeding Mr. Wells, and **J. R. Hitchcock**, superintendent on the Los Angeles division, with headquarters at Los Angeles, has been promoted to assistant general manager, succeeding Mr. Hibbard. **R. H. Tuttle**, superintendent of the New Mexico division, with headquarters at Winslow, Ariz., has been transferred to the Los Angeles division, succeeding Mr. Hitchcock, and **William Mathie**, trainmaster at Winslow, has been promoted to the position of superintendent, succeeding Mr. Tuttle.

Corporate

Executive, Financial, Legal and Accounting

William Sproule has resigned as district director of the Central Western region, with headquarters at San Francisco, Cal., to resume the position he held prior to the war as president of the Southern Pacific. **C. J. McDonald**, assistant district director at San Francisco, has been promoted to district director, succeeding Mr. Sproule.

Martin P. Blauvelt, whose resignation as assistant regional director of the Allegheny region was announced in the *Railway Age* dated October 10, and issued November 26 (page 762), has been elected vice-president in charge of the accounting and finance departments of the Illinois Central, with office at Chicago. Mr. Blauvelt was born at Suffern, N. Y., on February 25, 1865, and was educated at Goshen Collegiate Institute. He entered railway service in 1885 as a clerk in the freight office of the Delaware, Lackawanna & Western, at Hoboken, N. J. On October 6, 1887, he became connected with the New York, Lake Erie & Western as a clerk in the office of the auditor of traffic. 1891 he was promoted to clerk in the office of the third vice-president and auditor. From January, 1893 to February, 1896, he was general bookkeeper and from the latter date until 1910 was consecutively chief clerk in the accounting department, assistant auditor, auditor and comptroller. In 1910 he was appointed comptroller of the Illinois Central, with headquarters at Chicago, a position which he held until July, 1917, when he resigned to become controller of the Lehigh Valley with headquarters at New York City. This position he retained until 1918, when he was appointed assistant to the regional director of the Allegheny region.



M. P. Blauvelt

Gerritt Fort, assistant director of the division of traffic of the Railroad Administration in charge of passenger traffic with headquarters at Washington, D. C., has resigned to become vice-president in charge of traffic of the Boston & Maine. Previous to federal control Mr. Fort was passenger traffic manager of the Union Pacific.

Traffic

J. T. Livsey has been appointed freight claim agent of the Savannah & Atlanta, with headquarters at Savannah, Ga.

Engineering and Rolling Stock

Lieutenant-Colonel B. Ripley has been appointed district engineer of the Ontario district of the Canadian Pacific, with headquarters at Toronto, Ont., succeeding **A. L. Hertzberg**, who has retired.

G. W. Bourne, traveling engineer and trainmaster on the Denver & Rio Grande, with headquarters at Helper, Utah, has been transferred to the Green River division, with office at Soldier Summit, Utah. **C. H. Wilcken** has been appointed to succeed Mr. Bourne at Helper.

Obituary

W. H. Norris, attorney for the Chicago, Milwaukee & St. Paul, with office at Minneapolis, Minn., died in that city on November 16, at the age of 87 years.

Charles H. Wiseman, division passenger agent on the Baltimore & Ohio, Western Lines, with headquarters at Cincinnati, Ohio, died in that city on December 11, at the age of 59 years.

George M. Brush, father of Mathew C. Brush, president of the American International Ship Building Corp., and prominent in the development of railroads in Minnesota, died at Philadelphia, Pa., on January 3, at the age of 74 years.

Frederick T. Fearey, organizer of the Continuous Rail Joint Company, New York, who served as president of that company and its successor, the Rail Joint Company, until his retirement about two years ago, died on January 5 at his home in New York.

Colonel Julian E. Buckbee, for many years prior to his retirement on a pension in 1910, chief clerk in the land commissioner's office of the Chicago & North Western, with office at Chicago, died at Hermosa Beach, Cal., on December 29, at the age of 75 years.

William W. Thompson, formerly and for many years treasurer of the Louisville & Nashville, died at his home in Louisville, Ky., on January 6, at the age of 73. Mr. Thompson was connected with the Louisville & Nashville for nearly half a century, having begun as a contractor for the construction of a short section of the road between LaGrange and Cincinnati. In 1867 he was appointed paymaster, and later treasurer.

John P. O'Donnell, M. I. C. E., of London, England, died early in December, at the age of 61. Mr. O'Donnell was a well-known signal engineer and manufacturer, and formerly had connections in the United States. He was formerly for several years in the service of the London & South Western, and had charge of important signal work on that road. He was chairman and managing director of the British Pneumatic Railway Signal Company, and installed the first automatic block signals in Great Britain, those on the London & South Western, between Grateley and Andover.

Joseph M. Denyven, general freight agent of the Mobile & Ohio, whose sudden death was announced in the *Railway Age* of December 26 (page 1268), was born in Dorchester, Mass., June 20, 1863, and began railroad work at the age of nineteen as clerk in the auditor's office of the Missouri Pacific. Mr. Denyven remained with the Missouri Pacific for four years, resigning to become rate clerk of the Mobile & Ohio, which position he held until 1888, when he was promoted to chief clerk in the general freight office. From December, 1890, to April 1905, he was assistant general freight agent and from that date until his death filled the position mentioned above.



Photo from International

The Railway Station in the Town Where the Czar Was Said to Be Assassinated